HISTORIA MUNDI

A HANDBOOK OF WORLD HISTORY

in ten volumes
founded by

FRITZ KERN

Volume 1:

EARLY HUMANITY

is the first international collaborative work of historiography following World War II; outstanding historians from a wide variety of nations were brought together to bring it to fruition. The goal of this large-scale work is to synthesize the diverse individual research efforts and thereby encompass all aspects of human life: political as well as sociological, economic as well as cultural and religious. From an international perspective and without prejudice, the work seeks—following the widespread confusion of the war years—to foster a better and deeper understanding of humanity's shared interests. It embodies the current state of historical scholarship; it will be indispensable to every historian, and it offers history enthusiasts an inexhaustible wealth of knowledge.

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814 WEST WISCONSIN AVE.
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HISTORIA MUNDI

A Handbook of World History in Ten Volumes

FOUNDED BY FRITZ KERN

IN COLLABORATION WITH

WILLIAM FOXWELL ALBRIGHT, HENRI BREUIL, RAFAEL CALVO SERER,
G. P. GOOCH, G. LEVI DELLA VIDA, H. S. NYBERG,
FRANZ SCHNABEL, HAROLD STEINACKER, RUDOLF TSCHUDI

EDITED BY FRITZ VALJAVEC

IN COLLABORATION WITH THE
INSTITUTE FOR
EUROPEAN HISTORY IN MAINZ

Volume One:

EARLY HUMANITY

FRANCKE PUBLISHERS, BERN

EARLY HUMANITY

BY

SANTIAGO ALCOBÉ Y NOGUER, HERMANN BAUMANN, RENATO BIASUTTI, HENRI BREUIL, J. G. D. CLARK, EGON FREIHERR VON EICKSTEDT, FRANZ EPPEL, JOSÉ IMBELLONI, FRITZ KERN, JOSEPH KÄLIN, BERTIL LUNDMAN, OSWALD MENGHIN, KARL J. NARR, ADOLF PORTMANN, ALFRED RUST, WILHELM SCHMIDT, ILSE SCHWIDETZKI, HANS SEDLMAYR, AND HENRI V. VALLOIS

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(Detailed table of contents on p. 555)

FRITZ VALJAVEC [Munich]: Preface 9
FRITZ KERN: The Lessons of Cultural History on Human Nature 11

MAN
The Becoming of Man and Early Humanity

ADOLF PORTMANN [Basel]: The Emerging Humanity 21
JOSEPH KÄLIN [Fribourg]: The Oldest Human Remains and Their Phylogenetic
Interpretation 33
HENRI V. VALLOIS [Paris]: Humans in the Upper Paleolithic and Mesolithic 99

Biodynamics of the Continents

EGON FRHR. VON EICKSTEDT [Mainz]: The Biodynamics of the Europids..... 115
BERTIL LUNDMAN [Uppsala]: The People of Europe Today..... 135
EGON FRHR. VON EICKSTEDT [Mainz]: Racial Types and Type Dynamics of Asia 147
HERMANN BAUMANN [Frankfurt am Main]: The Races of Africa 167
SANTIAGO ALCOBÉ Y NOGUER [Barcelona]: The Biodynamics of the African
Continent 175
JOSÉ IMBELLONI [Buenos Aires]: Racial Types and Biodynamics of the Americas ... 188
RENATO BIASUTTI [Rome]: Racial Science and Racial History of Oceania 204
ILSE SCHWIDETZKY [Mainz]: Population Biology of Early History .. 217
EGON FRHR. VON EICKSTEDT [Mainz]: Priority-Based Designations of Human Varieties in Binary and Trivial Nomenclature 223

PREHISTORY

OSWALD MENGHIN [Buenos Aires]: Fundamental Questions of Prehistory 229
HENRI BREUIL [Paris]: The Early and Middle Paleolithic 259
ALFRED RUST [Ahrensburg]: The Late Paleolithic 289
J. G. D. CLARK [Cambridge]: The Mesolithic 318

HANS SEDLMAYR [Munich]: The Origin and Beginnings of Art 346
FRANZ EPPEL [Vienna]: The Art of the Early and Middle Stone Ages 356
LIVING PEOPLES AS REMNANTS
OF THE MOST ANCIENT PEOPLES AND CULTURES
WILHELM SCHMIDT [Posieux]: Primitive Cultures: The Early Hunting and Gathering Stage . . 375
KARL J. NARR [Bad Honnef]: Advanced Hunting: The Late Hunting and Gathering
Stage 502
BIBLIOGRAPHY 525
INDEX 549

We hereby present the first volume of *Historia Mundi*: The founder of this project, the Bonn historian Prof. Fritz Kern, had long been planning it. Even his study of Dante, *Humana Civilitas* (1913), and his famous work *Divine Right and the Right of Resistance* (1914) attest to his perspective on universal history. They pave the way for his groundbreaking work in prehistory and cultural-historical ethnology. But it was not until the twilight of his life, in the spring of 1948, that he was able, together with a community of researchers and with the support of the publishing house A. Francke A.G. in Bern, to set about realizing his intentions and laying the foundation for *Historia Mundi*. Kern had established the essential details for the first four volumes when a creeping illness made it impossible for him to continue fulfilling his tirelessly pursued task. He passed away in Mainz on May 21, 1950. The continuation of this work is a binding legacy for us.

Historia Mundi, which will comprise ten volumes, is the first international collaborative project in the field of historiography since the end of World War II. It draws on the contributions of leading scholars from all countries.

The individual characteristics of the contributors and the perspectives they represent are fully reflected. An overly rigid editorial approach would not be in keeping with the goals of our project. Differences in scholarly terminology are retained as is, but are indicated by references, overviews (p. 223), and an explanatory chronological table at the end of the volume. We strive to present the material in a clear and accessible manner.

We extend our thanks to the publisher, the contributors, friends, and supporters of this project. We would like to express our heartfelt gratitude to the members of the advisory board for their invaluable contributions. The authors bear the scholarly responsibility for their respective contributions.

The selfless work of the section editors has been particularly important throughout the course of the work to date. The sections on anthropology were supervised by Prof. Dr. Egon Frhr. von Eickstedt (Mainz), and the sections on prehistory and early history by Prof. Dr. Kurt Tackenberg (Bonn). Their contribution to the completion of Volume 1 deserves to be gratefully acknowledged, as does the valuable assistance provided by Dr. K. J. Narr (Bad Honnef).

Even the preparatory work on *Historia Mundi* met with enthusiastic approval from scholars in many countries. We see in this willingness to participate actively a binding commitment to a responsible intellectual community. *Historia Mundi* is also intended to serve this community.

F. V.

THE TEACHINGS OF CULTURAL HISTORY ON HUMAN NATURE

BY FRITZ KERN

History is the memory of humanity. Our mission as historians is limited to the effort to purify and preserve the collective memories of our species. Rarely are we heeded, for the private happiness sought by the masses is ahistorical. History arises from suffering. Crises, wars, and catastrophes awaken a sense of history even among the general public and also lead to reflection on human nature—a nature one comes to know only in its folds and chasms, which necessitate a reexamination of lighthearted and comfortable illusions. Thus, the ruin of present-day Europe has also directed anxious glances toward history—or toward philosophy, which strives to discern the full scope of our nature from history.

How does historical reflection explain our present plight, and what remedy, what hope does it suggest? To what extent can sound criticism and serious research be effective in this regard?

If the spectacle of world history through which we survivors are passing had unfolded 300 years ago, everyone living in Europe or elsewhere at that time would have seen and felt in it a mighty divine judgment upon the nations. People would have recognized in it the fruits of sin, of a lack of love or moral courage, and of the collective greed of nations and classes. They would have understood the terrible retribution, sensed the justice of history, and drawn profound lessons from it about human nature and humanity's historical tasks and duties. This religious understanding of history, as shaped by the prophet Amos, Augustine, and others, has not completely died out in our day. It was, for example, elegantly revived by the philosopher of history Christopher Dawson. However, other currents of thought are more powerful—and la faute en est à Voltaire, as they say in France. Since the Age of Enlightenment, the old unanimity has been broken. We cultural historians, however, have discovered in the school of W. Schmidt that belief in divine judgment existed among primitive peoples long before Israel; it dates back to the earliest strata of humanity, which we have come to know better in recent times; and this belief was inherent in our earliest ancestors. Only for the past two to three centuries

has it first been "refuted" by a few intellectuals and, more recently, denied by ever-wider masses.

Let us consider the non-religious historical theories that have replaced it, beginning with the least problematic of them all: *the cyclical theory*. It was originally introduced by the brilliant Neapolitan Vico; it was brilliantly popularized after World War I by the German Spengler; and it gained momentum after World War II through a skillful excerpt from the philosophy of history by the learned and likable Englishman Arnold Toynbee. No one disputes the decline of our old Europe anymore; thus, the readers' imagination must be captured by the promise of uncovering the laws by which cultures form and fade away, one after another rising and falling.

I cannot and need not here engage in a detailed scholarly critique of the twenty-one cultures that Toynbee describes and considers to be the total number of all that have ever existed. Historians admire Toynbee's comprehensive erudition without overlooking its gaps. I shall limit myself here to the philosophical aspect. These twenty-one cultures are, as it were, living beings, hypostatic like the Horae, whose dance they resemble. Their uniform laws of development encompass human individuals, swallowing up, so to speak, humanity itself—human nature; they stifle—without the author intending to do so—freedom, responsibility, sin, and punishment within their ironclad rhythm. The bewildering spectacle of the coming and going of civilizations—which must come into being and die—is governed by no other absolute value than the laws of change in time and space.

The shock of World War I had torn the young Greek scholar away from his specialized work and led him to the philosophy of history. The first three volumes of his *Study of History* (1933) delighted a small circle of Hellenists and humanists. In the second triad of the nine-volume work (1939), a new discovery of God begins to emerge, and some are already lamenting this "weakness" on the part of the humanist Toynbee. In the final three volumes, currently in progress, Toynbee increasingly recognizes Christianity as the most important substance of human history. With this deepened conviction in supernatural power, the nature of humanity in its historical unfolding will necessarily emerge more clearly.

The theory of cultural cycles, of course, will always remain incomplete. It is universal, but not universal enough. The Doctrine of Growth

and has been developed in the context of aristocratic or bourgeois cultures. It serves to understand refined, complex, and fragile cultures and is by no means applicable to enduring ways of life such as those of the simplest indigenous peoples—the true primitives—or even peasant culture. Unwittingly, Toynbee reveals his weakness in that he denies the very character of civilization to cultures that are not "advanced civilizations" in the usual sense of the word. This stems less from the arrogance of the humanist, for whom culture begins with the Greeks, than from a lack of knowledge of ethnology —or, more accurately, from the unresolved state of contemporary Anglo-Saxon ethnology and even anthropology, which certainly do not provide a solid foundation for such a conscientious historian as Toynbee. However, it is not acceptable to reserve the term "culture" exclusively for unbalanced urban cultures. One cannot discern the full scope of human nature from history if one excludes indigenous peoples. As soon as one takes this broad foundation of all human history into account, one encounters a *Historia perennis* of human substance, which has been partially eroded in the artificial constructs of high culture (which may well explain the loss of balance and the susceptibility to pathological or sudden changes). Therefore, one must and should free oneself from*cyclical determinism*. Decadence is not inevitable; primitive cultures, to which the cyclical schema does not apply, demonstrate this, and *natura semper corruptibilis* is never corrupted without hope of salvation. Deeper research leads to greater simplicity and clarity; even the historian, who is granted the gift of experiencing the events of his own life and the course of human history in the light of a truth that unites the personal and the universal without contradiction, must acknowledge this.

There is a contemporary philosophy of history that purports to be based on ethnological facts and, with a claim to true universality, believes it can grasp human nature itself without having to resort to the supposedly outdated belief in the divine creation of that nature. This is Enlightenment-era historical *evolutionism*, which was—or still is—widely prevalent in two main currents. I will begin with the optimistic *progressivism* of the bourgeois-liberal variety, which, roughly until World War I, sustained the prevailing spirit of the 18th century in idealistic-philanthropic and, at the same time, progress-believing circles, and which is still upheld, above all, in prosperous North America. According to this view, history does not begin with the human being created by God according to

in his image, but rather the dull, brutal, godless, and loveless man of violence, who gradually tames and refines himself in the course of history until he has ascended to the moral heights of the Victorian citizen along with his prosperity; and with this cultivated European of technical perfection, the final summit is reached, beyond which history can spare itself further developments, unless, of course, this or that improvement in the standard of living and public morality—the two going hand in hand—can still be made.

The delightful satisfaction of the progressives over what they have achieved through their own efforts has died out in Europe since 1914. In its place, the second offshoot of evolutionism has grown into a tree overshadowing entire countries: pessimistic *brutalism*, which indeed also pays homage to the cult of the standard of living, but invariably views human nature as the bête humaine. This category includes Darwinism along with other biological theories of history, the deification of power and violence, the heroized egoism of individuals or collectives, and the combative evolutionary doctrines of Keith, Sorel, Nietzsche, and Lenin. Insofar as this theory seeks to base itself not only on the descent hypothesis but also on the alleged cultural history of nineteenth-century ethnologists, it shares with the progressives—who, for their part, wish to abhor and overcome violence—the notion that primitive man was a half-ape. It merely adds the glorification of violence as the actual driving force of development. Progressivism has been refuted by the regression of our times and has given way to cyclical theories of decadence. But brutalism has received some apparent confirmation through the experiences of our time. Progressivism would thus be proven false in favor of biological brutalism; but if the latter were correct in its historical portrayal of primal human nature, we would have nothing left to hope for. For how could a new humanity possibly develop if our nature is, after all, just as it reveals itself at the lowest points of humanity? We must therefore ask: on what historical facts is this concept of human nature actually based?

The theories of Tylor, Morgan, Frazer, and Westermarck—which still dominate in Anglo-Saxon countries—are based on a colorful and incomplete anthology of ethnological phenomena collected in the 19th century and initially found in a completely disordered jumble outside Europe. According to what principle were they historically classified? At that time, there was still no method for determining the relative age of the individual phenomena. Consequently

the bourgeois Enlightenment thinkers quite naively assumed that whatever seemed most unlike the well-mannered Victorian should be placed at the beginning of history, since history, for the time being, culminated in its most recent link: the well-mannered Victorian. He went to church; therefore, polytheism and animal cults must have been older than belief in God, and at the beginning there must have stood the completely godless, irreligious human being. The Victorian citizen professes monogamous marriage. If so-called group marriages or even complete sexual promiscuity were found anywhere, they must have existed earlier than orderly monogamy, and at the very beginning, supposedly no one knew who their father was at all; thus, so-called matrilineal society is the original form. By analogy, early humans—who were supposedly without families—were denied any social responsibility whatsoever, and because the economic order of the nineteenth century was so sound, it must have been entirely absent among early humans; people even believed they had to strip them of any sense of property, of "mine" and "yours." Many ethnological facts known to us today had not yet been researched; thus, such a superficial and naively parochial arrangement of facts became possible in the first place. Where it is still upheld today, this is partly due to scientific inertia and an inability to engage in synthetic criticism, but partly also due to bias and a lack of interest in advances in knowledge, as well as an aversion to the truth that sets the record straight.

Thus, Morgan—whose ideas are ten times outdated and have long been refuted—has been canonized as a doctor of Marxism. People want to liberate humanity today from religion; they want to abolish private property: what could be more compelling than the spurious evidence that all of this corresponds to unadulterated human nature and constitutes our primordial culture? The "paradise" to which one thus returns, of course, lacks any sense of sin. God, conscience, a loving, self-sacrificing community of souls, and moral uplift would be mere illusions of the Middle Ages, when priests talked the people into stupidity. The liberated people reclaim their right to the instinctive primal brutality of the most intelligent predator.

Whether this theory is effectively corroborated by recent history or offends our sense of human dignity, in any case the assertion as such is a historical force of immense contemporary significance. It is therefore well worth asking the question very precisely: Must we accept this view of history as a plausible or even proven fact, or have false conclusions —that is, pernicious guidance for our practical and moral conduct— been drawn and continue to be drawn from false premises, i.e., falsified historical facts?

In the light of modern science, the arrangement described above—a patchwork collection of facts in the spirit of optimistic or pessimistic evolutionism—has become ridiculous; the blind faith of modern, semi-educated masses in this bogeyman is deeply saddening, and the pseudo-evolutionary doctrine, clung to despite better information being available, is either negligence or demagoguery.

I now turn to the alleged *anthropological* evidence for the cultureless primitive human. Darwinist anthropologists did indeed believe, at the beginning of our century, that they possessed skeletal remains of the "ape-man" dating from the middle of the Ice Age—that is, they adopted the name Pithecanthropus as an accurate designation for the remains of a human form to which our completely cultureless ancestor—a half-animal or half-human, presumably lacking any real capacity for thought or language—was supposed to have belonged. Just how much this naively hasty interpretation of bone remains contributed to the brutalization of historical theories remains undiscussed. In any case, this theory is not true. For nearly 20 years now, Henri Breuil has proven the fully human culture of the Pithecanthropus type from Chou-kou-tien through magnificent tool finds. Incidentally, the physical differences between the Pithecanthropus races and those that anthropologists call Homo sapiens are not all that significant. It was therefore a grotesque display of arrogance to want to reserve the designation "Homo sapiens" for the human races closest to our own type: the same parochial misjudgment of the facts as that of the progressive ethnologists. Now, for several years, we have known—to an even greater extent—that unmistakable precursors to the Homo sapiens type appear in geological strata at least as early, if not earlier, than the so-called Pithecanthropus.

Respect for the facts has thus consigned all manner of loudly proclaimed evolutionary series to the archives of overcome errors. Just as new discoveries, even in the field of physics, have at a decisive point loosened the supposedly inescapable determinism of the materialist era around 1900 and provided a possible starting point for the assumption of a non-physical cause of action, so too does the improved biology of our day come to the aid of freedom of belief. Several generations of researchers have firmly believed that *creation and evolution* are irreconcilable opposites. The most advanced mutation research, on the other hand, points to an emerging theory that increasingly reconciles the actually established facts of the evolution of living species

with the possibility—indeed, with the postulate—of creative acts. Qualified experts are at work replacing the outdated theories of mechanistic evolution with a more worthy successor: an "orthogenetic" theory.

Advances in ethnology have liberated *cultural history* from that unfounded evolutionism just as advances in biology have liberated the *natural history* of humankind.

For the new anthropological perspective, I cite the names of Ashley Montagu, von Eickstedt, Kälin, Portmann, Schindewolf, and Vallois. For the transformation of ethnology into a true universal history, I must first mention the founders of the *cultural-historical school* in Berlin, Vienna, Bonn, who emerged nearly 45 years ago—Gräbner, Ankermann, and W. Schmidt—whom dozens of researchers followed. One must emphasize the objective impartiality with which Ranke's method of historical criticism has been applied here to cultural history. In contrast to Hegel's philosophical constructions of history, Ranke simply sought to ascertain how things actually were. The principles of source criticism that he taught the young historians of his time in his seminar have now also dispelled the evolutionist speculations about the origins of culture. It will become evident that the sequence of the most important cultural strata, established according to objective criteria, simultaneously points to those causes of cultural change that historically illuminate the true nature of humankind —a nature of humanity that can be grasped in a fundamentally different and deeper way than that constructed, supposed nature which, in the 19th century, people—prejudiced as they were—sought to use as the basis for the then arbitrarily arranged stages of development in cultural history.

MAN

HUMANITY IN THE MAKING
THE PROBLEM OF HUMANITY'S ORIGINS

BY ADOLF PORTMANN

For more than a century, intensified exploration of the Earth's crust has brought to light an increasing number of findings that bear witness to the existence of humans in remote times. A particularly large number of these fossil traces of humans have been unearthed since the mid-1920s, including some that point to the earliest periods of the existence of human-like beings.

It goes without saying that these important findings have been interpreted primarily in light of the theory of evolution, which became so significant following the publication of Darwin's work in 1859; yet it is understandable that, as evidence of our origins, they could not always be assessed as dispassionately, objectively, and carefully as the fossil remains of any reptile or fish. The interpretation of the findings that bear witness to early humans, and their classification alongside the rest of the fossil record of primates, has mostly been carried out in the spirit of preconceived notions stemming from non-scientific convictions. Whether, in the clash of opinions, the biblical account of creation was staunchly defended out of religious conviction, or whether other views—equally shaped by faith and worldviews—elevated the theories of early Darwinism to the status of infallible dogma—there was always, in the weighing of pros and cons, a sentiment that was at least partly, and most often decisively, opposed to a genuinely scientific examination of the questions of origin.

Our presentation must begin with an overview of the concept of evolution currently accepted in experimental biology. Few of the countless life forms that coexist with us have existed as species since the oldest geologically studied layers of the Earth. The forms of plants and animals appear in the stratified rocks from various geological periods. Thus, fossil traces bear very clear witness to

that no vertebrates other than fish are found in the oldest geological strata, that land-dwelling four-legged animals appeared later than fish, and that it was not until the great age of the reptiles—in the rocks of the Triassic and Jurassic periods—that traces of warm-blooded animals, mammals, and birds were found. It was not until the last 60 million years of Earth's geological history that the many groups of birds and mammals emerged on Earth, including the so-called "primates," to which apes and humans belong. Naturalists have many reasons to suspect that the duration of human existence on Earth spans a period of about 500,000 years—half a million years, of which only the last 6,000 to 7,000 constitute what historians call "history"! *[See H. Breuil, p. 259.]*

The joint research of geologists, paleontologists, and zoologists has clarified the chronological sequence of the appearance of the major animal groups and has established the sequence of forms in Earth's history as one of the great facts. Fossil human remains also fit into this chronological sequence.

The chronological sequence of the first appearance of new animal and plant forms is one of the most reliable foundations of that general biological concept known as the theory of descent, transformism, or the theory of evolution. It interprets the geological sequence of life forms as a relationship of genuine kinship through descent: as lines of development whose members arose separately over the course of Earth's history, which have been gradually transformed in form and behavior during this process, and which will continue to undergo transformation.

This most general conception of the relationship among life forms is supplemented in evolutionary theories by additional assumptions regarding the specific manner in which this process occurs, as well as the factors that bring about, direct, or influence evolution. Since the bold attempt by Lamarck (1809) and the far more successful one by Darwin (1859), the most diverse variants of neo-Lamarckian and neo-Darwinian doctrines have been in contention, with varying degrees of success, right up to the last few decades. Experimental genetics—the study of hereditary processes and the hereditary variations in animals and plants known as "mutations"—has brought about a turning point in these debates, which many biologists regard as decisive, in that a variant of evolutionary theory has established itself as the valid explanation for morphological change across broad circles of biological research. We can call it a "mutation theory." Hereditary changes (mutations) in that genetic material

of the species—located in the chromosomes of the cell nucleus—constantly produce variants (mutants) of varying degrees in every animal or plant species. Through selection processes of a wide variety, the survival of certain variants is favored over others—some of them even conquer new habitats or displace the original form within the species' original range. Since a wide variety of variants can emerge from a wild population as new forms, it is also possible for them to become isolated from one another in groups—as occurs when they colonize different valleys, archipelagos, or regions with vastly different climates. Often, the process of mutation affects the time of sexual maturity or the nature of mating instincts. Deviations in this area of behavior can also lead to the isolation of closely related groups; they become "alien" to one another and, as a result, diverge further and further through continued variation.

The evidence for such evolutionary processes within species living today is abundant and speaks for itself. The vast majority of biologists therefore consider it proven that, at the very least, animal and plant species produce new variants in this way through mutation, selection, and isolation—variants that often differ considerably from the ancestral forms we know.

Experimental research into this hereditary variation can only pertain to species existing today and their races; its results are verifiable only within this realm, and therefore the only statement that may be regarded as a well-established fact of our knowledge is that the classification of groups of forms—such as that of species into subspecies or races—as well as their distribution, is based on the factors just mentioned and is thus explained by the current form of the theory of mutation.

However, we leave the manageable field of research as soon as we use the same theory to explain the origin of changes other than those within the groups of forms just described. We must emphasize this scope of a scientifically established theory of mutation with the utmost force, for this limited view is not readily accepted by biologists. In many circles, evolutionary theories are prevalent that consider the scope illuminated by mutation theory to be much broader. And we must pay all the more attention to these expansions, since their adherents are particularly fond of imagining themselves free of prejudice, describe their view as objective, and label all other views on evolution as "ideological" or "religious" biases.

We must therefore examine this question of the scope of the currently dominant theory of evolution in somewhat greater depth. All scientific decisions take place within the tension of a historical and personal situation and are never made without bias [cf. O. Menghin, p. 229]. A scientific theory is never conceived as an image on a completely untouched surface, never as the first depiction on a blank, pure canvas. Countless lines and figures—however faint and indistinct they may be—have already been drawn on this canvas by earlier generations. And the more deeply the problem we seek to solve preoccupies us as human beings, the more controversial it is, and the more our intellectual values are tied to its solution, the denser and more convoluted the background is already inscribed and marked—the very surface upon which we wish to create a new image. The question of human origins, however, is one of the most controversial and fundamental of these problems, and so the canvas for any such image resembles more one of those space-saving pattern sheets our women use than a blank, pristine sheet of paper. Anyone working on such a canvas is constantly tempted to include figures suggested by the existing lines. No one escapes this peculiar situation, and it is therefore essential to recognize the moods and intellectual presuppositions that currently influence, above all, the prejudices and preconceptions regarding the problems of origin. Two poles of attitude toward this fundamental question can be identified—two significant poles between which a large number of less decisive ways of thinking and attempts at explanation could be classified. Here we seek only to characterize the contrasts that are decisive for current scientific debates. In what follows, we speak only of the premises held by biologists who are genuinely engaged in research and who work on the scientific side of the problem of origins, but not of the motives from which outsiders make their choice among the theories offered by science.

One pole is defined by a widespread belief in the salvific power of science and in the destiny of the future as an order of existence guided primarily by science. In this camp, religious experience is regarded as archaic, as doomed to disappear, and there is often an unspoken monism that believes in the coming of a unified scientific explanation of the world and draws particular strength from this hope. This underlying sentiment also animates the scientific work of researchers in

extremely Marxist circles, as well as that of many biologists in so-called enlightened democracies. In many cases, the struggle against the dogmas of the Christian Church also provides significant impetus for this way of thinking—in other circles, however, these "Kulturkampf" sentiments are absent, and researchers draw strength from the certainty that science will inevitably eliminate or replace religious ways of life [cf. O. *Menghin*, p. 234].

This extreme scientism tends toward a radical interpretation of the theory of mutation, from which it constructs the absolutely valid model that explains all evolutionary processes. Thus, the view is held that the experimentally determined processes governing the formation of species variants explain the transformation of all animal and plant life, and that these same processes, over the course of the Earth's long history, have produced all the forms we encounter today, as well as all the long-extinct genera attested to by the Earth's past. This perspective today forms the "neo-Darwinian" version of the theory of evolution. It also explains the process of human evolution as a gradual transformation of ape-like primates, achieved through many stages of mutation and the elimination of many variants.

At the opposite end of the spectrum of views on the origin of organic forms are those researchers who draw the boundaries of scientific possibilities more narrowly and who, for this reason, also view monistic attempts at explanation with caution. For these biologists, the magnitude and complexity of the facts that evolutionary theory must explain are so strikingly evident that, for this reason alone, they tend to be skeptical of the overly extensive use of experimental findings. With this line of thinking, the mutations known today are accorded only a narrowly limited explanatory value, and it is assumed that the emergence of significant transformations in organisms is based on processes that we do not yet understand at all. Some biologists suspect that these more profound changes occur in the early stages of the embryonic period, where greater latent formative potentials are at work in simpler forms. Often, the totality of these as-yet-unknown evolutionary processes is referred to as "macroevolution," and the modes of variation currently being studied experimentally are contrasted with it as "microevolution." However, there are also voices emphasizing that, in this particular case, "microevolution" does not extend beyond the boundaries of a species at all—and is therefore not responsible for the sequence of forms in Earth's history—and that it is merely "variation"—albeit often very extensive. The processes classified as macroevolution—

are, according to this view, the sole agents of true transformation.

When a choice is made here between the two poles of interpretation, it is done with full awareness of the conditional nature of any such decision, but also with the certainty that we *must* make such decisions, and that we always make them in specific historical situations. In what follows, I will attempt to explain why I believe that the viewpoint described last more accurately reflects the reality known to us than the way of thinking described first. Certainly, every researcher will adhere to the principle that only what can be traced back to modes of operation accessible to our understanding may be considered scientifically established. However, research must proceed with the awareness that we do not know all the modes of action occurring today, but must assume a wide scope for unknown modes of occurrence in past geological epochs. The shifting theories regarding the Earth's formation or its inaccessible interior have taken on entirely unexpected aspects since the new insights into nuclear fission—aspects that no one would have dared to describe a few decades ago. In recent times, conceptions of the decisive processes involved in the formation of mountain ranges have increasingly been presented in such a way that, in addition to the accumulation of known phenomena, they also leave open the possibility of the influence of completely unknown components that play decisive roles.

The study of nature teaches us many important lessons that pertain precisely to this consideration of as-yet-unknown mechanisms. The structures and modes of operation of living organisms that have been discovered are, without exception, surprises to our technical understanding as soon as we leave the realm of everyday human life and enter the realm of the microscopic and submicroscopic—the realm of protoplasm. No one could ever have imagined the structure of a cell nucleus, nor could anyone have predicted the process of genetic material transfer in its structural specificity; neither the mode of action of enzymes nor the hormonal regulation carried out by the endocrine glands could have been theoretically foreseen. Nor did thought ever foresee the sudden changes—now the subject of such intensive research—known as mutations, any more than it foresaw the composition of atoms. Everything in the field of plasmatic processes is, for the human observer, a discovery of the new and the unexpected; nothing at all is a confirmation of a theory we had previously formulated. Yet this fact is not yet as fully recognized by human thought regarding natural phenomena as it ought to be.

Anyone who recognizes the dependence of our scientific thinking on new experiences and interventions will approach with the utmost caution those theories that, based on what has just been discovered, claim to fully comprehend the immeasurable abundance of life and to already fully explain its origin and metamorphoses through the mutations that have only just become accessible to us.

Under the impression of the dependence of our free scientific inventiveness on the constantly renewed nourishment of unexpected discoveries, a new understanding of the true complexity of organisms must also emerge in the researcher. He will repeatedly immerse himself in the richness of these forms and be deeply influenced by this ever-renewed knowledge of the magnitude of the object of research. Whoever is aware of the astonishing facts that the study of fossil traces of life reveals to us, whoever knows in detail the sophistication of adaptations to specific living conditions, and who, finally, truly begins to see how living forms, in every aspect of their structure and capabilities, transcend any mere necessity of survival—such a person, in the face of these realities and their enigmatic richness, will greatly limit the explanatory value of previous mutation theories, if not see them as confined to the narrowest circles of forms. Even the intellectual exploration of the problem of origin compels us to limit the interpretations attempted in neo-Darwinism. Thus, to those who delve deeper into the complexity of living phenomena, the assumption of the random origin of all initial stages, of all first states of organic structures, will seem downright impossible in many—indeed, in most—cases. Indeed, even those who, following a prevailing trend, might wish to postulate the absurd as an important characteristic of the organic will not see the richness of these astonishing living forms as the product of chance, but rather as the result of incomprehensible events. Anyone who, for example, surveys the evolution of the sense of sight and its central nervous system organization, and who furthermore surveys the forms created to be viewed—forms that appear to the visual organ as genuine "feast for the eyes"—will reject the assumption of random events and must admit to complete ignorance regarding the actual origin of such structures—not, mind you, their mutational variation once they exist! Given the aforementioned premises, it goes without saying that the entire mode of functioning of the human central nervous system—including the peculiar nature of mental interaction with the world—is part of these unresolved questions of origin. Anyone who, with heightened experience, recognizes the transcendence of every organic

form—the transcendence of every explanatory horizon—will, with greater experience, come to understand this ever more deeply; how much more will such a person then intuit the transcendence of all spiritual life and thus experience the magnitude of the problem of origin, both in its more immediate, investigable, scientific aspects and in its distant inaccessibility.

For anyone guided by such a fundamental conception in their biological work, the origin of organic typological differences—as the major groupings of the natural system attempt to designate them—remains an unsolved problem. This also leaves unresolved the question of what kind of connection is actually represented in the natural systems of botany and zoology. One can "believe"—in the truest and highest sense of this great word—that these systems represent the natural process we today refer to as "evolution." But one can never elevate this belief to the same level of certainty as, for example, the knowledge of the changes in the species that surround us. And even when believing in evolution, one must admit that one is unable to say anything with certainty about the forces at work or about the actual events that have taken place in Earth's history. No one can anticipate the views of future generations; however, it is important, in all discussions regarding how the diversity of living forms might have arisen, to always bear in mind that the events themselves in question once took place in Earth's history at a time so distant that it is beyond our reach, and that this very remoteness contains an element that is likely to make the reproduction of such events highly improbable even for the most optimistic experimenter. This debate concerns the scientific aspects of the problem of origins, and not the task of providing reassuring arguments for any traditional form of belief. The aim is to point to the dark distance in which the origin of all living forms is hidden, both in terms of time and in terms of the possibility of understanding. It is a matter of designating as unknown and hidden that which is unknown and hidden to us.

The fact that today a large number of biologists view the problem of origin as an unsolved question and as a field of research that is difficult to access depends—even within the narrower circle of life science itself—not only on the aforementioned assessment of the theories of mutation.

This attitude is also linked to a profound transformation in the development of

understanding of the organism, which is gaining more and more acceptance. It is linked to the discovery of the autonomy of biology and its research questions. The way of thinking that views mutations as the material for all evolutionary processes is strongly indebted to the view that derives life from inorganic substances and that also seeks to trace life processes ultimately back to factors of atomic and molecular activity—a view that, as scientific explanatory principles, accepts only the modes of action determined by physics and chemistry. Where other formulations occur in biology, this physicochemical way of thinking regards them as residues—as as-yet-unresolved remnants of an outdated vitalism, if not entirely mythical explanations of nature.

Today, the picture of life research looks significantly different. Through rigorous scientific work, the insight has largely gained acceptance that, while physical and chemical processes certainly have an important place in the field of biological observation, these processes at the atomic and molecular levels serve a completely new function when they are understood within the context of the functions of protoplasm.

The attempt to construct the organism using the processes and structural laws known from atoms and molecules has now been abandoned. Instead, the biologist recognizes the whole of every life form as the object given to research and recognizes in this whole the enigmatic reality—the specific reality of life that is to be explored. We no longer simply call this view vitalism, because in a crucial historical context—in its struggle against mechanistic interpretations of living beings—vitalism all too readily operated with “life forces” as explanatory principles, rather than viewing the distinctive nature of life forms, recognized as unique, as an open task to be explored using specific methods.

The totality of every life form as the reality awaiting exploration! That is the decisive new situation. And we already perceive this totality—even before we are able to fathom it in detail—in its immense strangeness and autonomy. Anyone who begins to explore the peculiarities of animal behavior and thereby encounters the fact —now scientifically established—of their subjectivity begins to sense the full scope of what a genuine scientific theory of origin will have to accomplish and explain. Every organic life form extends far beyond the elementary necessities of preservation in form and behavior; it manifests itself in color, form, sound production, and other

expressions, a representational value (Portmann 1948) or, as Buytendijk termed it in 1928, a "demonstrative value of being." This representational value bears witness to the "dimension without extension" inherent in all life forms—that depth which we know directly only from our own lives, that inner life which receives increasing attention in the study of higher life forms, and whose signs in behavior are ultimately the decisive criteria for recognizing higher life itself. However, this representational value also points to the being that is closed off to natural science—to which, ultimately, all natural forms must be related. Speaking of "nature," to which all manner of properties are ascribed, and which even the mechanistic mode of thought always calls upon at just the right moment, is the most commonly unacknowledged stopgap solution, which essentially indirectly concedes the existence of the incomprehensible. The task of exploring the unknown whole of a life form as far as possible, even in the most inaccessible dimension of inner life, and of keeping it present in one's mind—at least intuitively—even in its unexplored aspects during the course of research—this task of life research makes us more cautious toward theories of origin, because only the whole viewed in this way allows us to glimpse the magnitude of the object whose origin is to be explained. The mind that seeks to derive conclusions easily finds everywhere seeds, beginnings, and predispositions whose development can be conceived—but in doing so, it sees only what the various forms have in common, not what sets them apart.

Thus, it is easy to see that reptile scales and bird feathers possess a similar embryonic structure, which is built up from a layer of the epidermis and a group of cells in the dermis. In light of this similarity, it is very easy to claim that the feather is derived from reptile scales. However, aside from the fact that a transitional form has never been found, one must understand the sophisticated, purposeful structure of a feather to grasp what is actually required of a theory of derivation in terms of explanation. None of the theories proposed to date accomplish this with regard to a structure that is, after all, still very simple, such as the bird feather. Even less are they capable of providing a picture of the processes that led to the uniqueness of the human form of life from an animal precursor. All attempts proposed to date fail completely when asked to explain the entire distinct nature of the human species. It requires no special effort to convincingly demonstrate, for example, the correspondence between all of our organs of speech and hearing and those of higher mammals. How different, however, is the situation when it comes to explaining the special function in which

the organs of hearing and speech occur in the speaking human being. For what is new is not the organ itself, but the way in which it is put to use by a particular form of life. What is new is human inner life, the way of experiencing the world, the capacity for abstraction; what is new is the symbolic function of language, which is an expression of the capacity for thought; what is new is the transcendence of the mere possibility of spontaneous expression of subjective moods: the capacity for controlled, objective utterance detached from the situation. What is new is factuality rather than situational behavior; the ability to judge independently of the situation rather than the instinct-driven chaining to specific situations. None of these distinctive features is explained by any of the proposed biological theories of origin.

In place of such explanations, empty or obfuscating verbal solutions invariably arise: all the characteristics we call mental have "arisen step by step," have come about "in many small steps," have emerged "very gradually." It is grandly proclaimed that they have simply developed "from inconspicuous beginnings," unfolded from "hidden" predispositions. . . But instead of such words, which obscure the problem rather than revealing it, we demand concrete details: we want to learn about the tiny steps that lead to the mental mode of existence; we want a scientific theory to provide real insights into the events that lead from the animal, situation-bound sound to the situation-independent, detached sign of language. Words such as "gradually" and "step by step" feign a quantitative, slow transformation within the framework of an unchanging essence, whereas in reality an entirely new mode of being has emerged. To conceal the immense significance of such an event with empty words cannot be the goal of a theory that claims scientific validity.

The biologists who make these demands of transformist theories are not "anti-evolutionists"; they simply insist that a scientific theory remain a genuine theory, open to discussion, and that it not solidify into a new system of dogma or offer verbal obfuscations as solutions to the most difficult problems. One may well hold the view that paleontology, in its study of Tertiary higher primates, is on the trail of human ancestors; one may, with very good reasons, maintain that **the South African primate finds are particularly close to prehuman states**. However, none of this should obscure or even prevent the recognition that the mode of being to be explained—the human—is so unique in its particularity that we must, from the perspective of paleontology—

logy, but only isolated contributions toward such a solution. We may also expect similar partial insights from recent studies on cerebralization. Biologists today hope to glean further important facts from the newly flourishing field of behavioral research, which is only just beginning to develop its own questions and is currently experiencing a major upswing as it frees itself from an overly simplified view of animal behavior. Taking the animal seriously in all its complexity is a promising step toward a biological understanding of the unique human species.

Biological research is penetrating the darkness surrounding the question of our origins from a wide variety of angles. No one can gauge the vastness of this dark realm; therefore, no one can say how much light biological research will eventually shed on the questions of our origins. Research is there to shed light, not to prophesy.

In the meantime, however, biologists and historians will work together to identify and describe the unique nature of our human existence as clearly as possible. In doing so, we will bring home to evolutionary research the true magnitude of the subject whose origins it has set out to uncover.

THE OLDEST HUMAN REMAINS AND THEIR INTERPRETATION IN TERMS OF TRIBAL HISTORY

BY JOSEPH KÄLIN

I. INTRODUCTION

Biological research is showing ever more clearly that the existence and development of the human body are also ordered toward the spiritual realm. Therefore, a comprehensive scientific understanding of the human being is only possible through an approach that allows the findings of biological research to be reconciled with those of the humanities in such a way that they do justice to the living wholeness and the rich tension of our existence. This tension, from which no human being can escape as long as they live, finds its outward counterpart in the unique openness of human existence to the environment. This openness to the environment is based on an inner detachment of the soul from the world and, ultimately, from one's own self—a state that Plessner[1] (1928) described as the "eccentric position" of the human being. It is an inner distancing from the things of the world—realized in constant counterpressure to the pressure of the emotional sphere—from which we can, in intellectual freedom, select and exclude these things; that is, we can make them objects of our cognition in accordance with value judgments that are entirely *non-biological*. Thus, human beings are able to grasp the things of the world *objectively*—that is, as objects, as aspects of a reality existing outside themselves. And this occurs through an unselfish, non-biological inclination toward intellectual cognition, which is deeply rooted in the nature of the human intellect. Thus, from his intellectual stance, man can help shape the factors of his living space and transform them through free, self-directed actions. In this way, he builds for himself—from the factors of the so-called "environment," which he helps shape within his own self—the richness of his cultural worlds in accordance with the nature of his mind. He alone is the living being that is open to the environment and free from it.

For the animal, on the other hand, there are no objects; that is, the factors of the environment exist in the animal's sensory perception—in accordance with its sensory capacity for assessment ("vis aestimativa")—only as self-referential carriers of meaning with a specific biological connotation: food tone, prey tone, predator tone, etc. Thus, the monkey comes to recognize a banana as its food, but one can never make a monkey understand that an apple could be food if there were no monkeys! What the animal perceives—

of its environment are, in principle, just as self-referential to the animal as its own body parts.

The experiments by Köhler[2] (1917/18), Yerkes[3] (1916), Kellogg W. N. and Kellogg L. A.[4] (1933), and others show that the so-called "actions" of animals—even among anthropoid apes—are determined by instincts and emotions. They are inevitably carried out under the pressure of the emotional value of certain situations of sensory perception that lie within the animal's general instinctual orientation. Thus, although astonishing learning achievements do occasionally occur—which, viewed in isolation, often simulate insightful behavior based on judgment— But there can be no question of an *independent structuring* of animal actions *not directed toward an immediate* environmental *goal* —a structuring that would *compel* the assumption of rational insight into causal relationships. The animal appears, in all its behavior, to be bound by instinct and captive to its drives. Animal existence is bound, for better or worse, to a one-sided, specific environment! Human beings, on the other hand, *lead* their lives—and must lead them—one way or another—out of the freedom of their will!

This gives rise to the uniqueness of human existence as a being that, in its *holistic substance*, is grounded in and encompasses the biological, yet is autonomous in its "mere being." Thus, even the physical aspect of human nature is subordinated to objectifying intelligence, the primacy of the spirit. Without this, we would be utterly unviable in the long run due to a hopeless lack of sufficient biological adaptations. Therefore, for biological reasons alone, there can be no "natural man" who is truly devoid of culture. Rather, we see "that our existence and our development are completely imbued with spirit in the true sense of this word, which is often used only as a special distinction for the highest form of humanity." (Portmann[5], 1941/42.)

But despite the extensive autonomy of spiritual processes, these are supported and shaped in all aspects of cultural life by the existence and development of human physicality. Cultural-historical events, too, are therefore extensively intertwined with the development of biological groups—namely, with the formation and transformation of racial and constitutional groups—in manifold interactions. This gives rise to the grave danger of overlooking the fundamental differences in causality between intellectual-historical contexts and physical development in the sense of evolutionary theory. Admittedly, the application of evolutionary thought to humans has become an established part of scientific views within the scope of the biologist's expertise. But thanks to the increasingly holistic approach—

even on the part of life sciences, a picture of humanity is emerging that promises to do justice to *both* the spiritual *and* material aspects of human nature.

In order to clearly grasp the uniqueness of human physicality and its significance, it is advisable to first clearly distinguish the typical appearance of humanity living today (*the Homo sapiens type*) from the primates living today that are most similar in form (the great apes). These are the so-called "anthropoids," that is, the category of Old World apes best known for the trio of chimpanzees, gorillas, and orangutans, and which is today designated in zoological taxonomy as the family*Pongidae*. For a long time, attempts were made to trace the origin of humankind back to the "anthropoids" in terms of phylogenetic continuity.

II. THE DISTINCTIVE CHARACTERISTICS OF THE MODERN HUMAN TYPE (HOMO SAPIENS TYPE)

IN COMPARISON TO THE "ANTHROPOID" APES (PONGID TYPE)

Most anatomists and anthropologists previously held the view that the specific characteristics of the human form were more or less the result of the upright posture acquired secondarily in the course of evolutionary history. However, it is becoming increasingly clear that the human organs, in their holistic interplay of form and function, express a distinctiveness that finds no parallel even among the pongids. In this context, the upright posture appears to us as a correlate of the harmonious alignment of all parts with the whole in terms of form and function. Bolk[6] (1926) was already correct in rejecting, at the Anatomists' Congress in Freiburg im Breisgau, the view that the upright posture of humans was, as he put it, the "prium agens" of their specific form. –

The typological character of the human bion unmistakably bears the stamp of a meaningful orientation toward the sphere of the spiritual and is notable, in terms of form, for its relative lack of organ specialization. This lack is related to the "environmentally open" form of human existence, to the absence of a close, drive- and instinct-driven attachment to specific reaction patterns, which leaves the animal's existence at the mercy of its species-specific environment. The typological nature of the human body manifests itself

in the laws governing growth before and after birth, in the somewhat fetal state of the human infant during the first year of life, in the development and differentiation of the brain, indeed even in the structure of the dentition, and above all in the anatomical correlations to an upright, deliberate posture. This includes the shape of the skull, the structure of the spine, the rib cage, the pelvic girdle, and, in particular, that of the extremities.

First and foremost, the proportions of the arms and legs catch the eye here. The marked predominance of arm length over leg length usually reaches its maximum in "anthropoids" as early as the fourth month of embryonic development. This results in proportions that are characteristic of the specialization of the extremities for a particular form of climbing locomotion. In humans, by contrast, leg growth increases so rapidly after birth that, according to Schultz[7] (1926), the arm length of an adult European amounts to only 82.5% of the leg length (compared to 136.3 to 166.7% in "anthropoids"). Compared to torso length, postnatal leg growth in humans is more pronounced than in any other primate (Fig. 1).

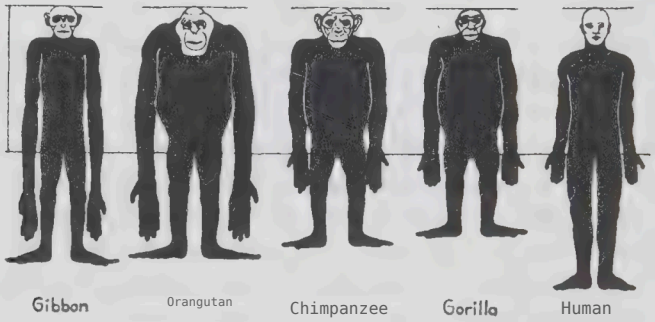

Fig. 1

Proportions of the limbs of humans and pongids.
(After *Schultz*, 1931.)

According to Schultz[7] (1926), leg length in Europeans increases from 115.7% of torso length in newborns to 175.4% in adults. It is true that in humans, at the early embryonic stage, there is also a considerable predominance of arm length (according to Schultz, as early as the ninth week, amounting to 132.7% of leg length). This temporarily greater arm length has usually been interpreted as a recapitulation of the adult states of ancestral forms. But the arbitrariness of this interpretation becomes glaringly obvious when we consider that the transient predominance of the forelimbs corresponds to a general allometric pattern of growth, whereby, in typical development across all classes of tetrapods, the forelimbs usually temporarily outpace the hindlimbs.

Here it becomes particularly clear that any attempt at a comprehensive causal explanation of human form—based solely on hormonally controlled retardation of ontogenesis, as proposed by Bolk's hypothesis—does not do justice to the facts.

As O. Abel[8] (1931) has shown, six different hand types can be identified among primates: the pincer hand, the claw hand, the hook hand, the suction-disc hand, the foraging hand, and the climbing-running hand. All the hands of today's living apes and prosimians, however diverse they may be, belong to one of these six specialized forms. Only humans occupy a special position here as well, in that their hand exemplifies a general type.

As early as 1911, the anthropologist Klaatsch[9] raised the question of why specialization had not occurred in the human hand. And, mindful of the uniqueness of this trait, Klaatsch explained: "That humans retained their hand—as simple as the fact itself may seem—must appear almost like a miracle."

Although we find among the "anthropoids" that the gorilla's hand is, in this respect, largely similar to the human hand, it does not quite attain the human hand's typical characteristics*.

Thanks to its lack of specialization and neuromuscular differentiation (with its abundance of tactile organs), the human hand —freed from its supportive function by the upright posture—becomes an organ indispensable for the objective perception of space, and, through its multitude of possible uses, enables humans to create and use genuine tools. Thus, thanks to the hand, humans can build a world unique to themselves: the cultural world. In this way, the hand becomes the cultural organ "par excellence."

The characteristics of the human hind limbs merit special attention because their close correlation with the upright posture is immediately apparent. Time and again, following Gregory[11] (1927), Morton[12] (1922, 1924), and others, attempts have been made to derive the human foot from an "anthropoid" foot. Here, too, the error lies primarily in the lack of a holistic approach.

In the evolutionary interpretation of these relationships, it must be noted that the foot of the "anthropoids," together with the entire limb, constitutes an anatomical structure that is only imperfectly characterized by the concept of a prehensile foot. Rather, the following features are present

* In "anthropoids," according to measurements by Mollison[10] (1910), the hand length is 55 to 63.4% of the body length (compared to 36.8% in humans). This, along with the relative shortening of the thumb and the curvature of the metacarpals and phalanges, constitutes the most important characteristics of the hooked hand.

a gripping foot combined with unique features that allow the torso to be pushed upward while climbing, yet prevent slipping. It is a bracing limb. The typical posture of the bracing limb is essentially a "squatting position" with constant flexion in the hip and knee joints as well as external rotation in the hip joint; due to the attachment points of the flexor muscles, the leg cannot be extended even passively. As a result of this and the "bow-legged stance" (*genu varum*), the lower legs move in a quasi-

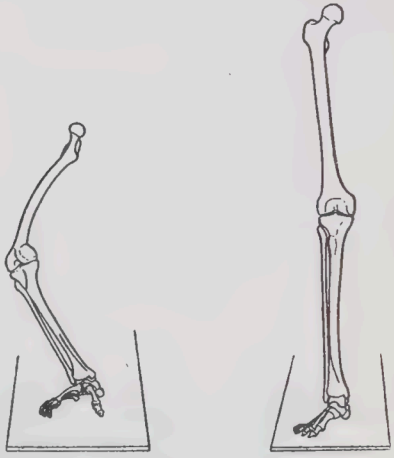

Fig. 2
The gorilla's "push-grip" limb and the human "standing-walking" limb.
(Based on specimens from the Institute of Comparative Zoological Anatomy at the University and the Natural History Museum in Fribourg, Switzerland.)

drupeder and bipedal postures. This creates a horizontal compressive force that must be absorbed by the splayed big toe (*Fig. 2*). This is also related to the structural peculiarities of the tarsus and the joint at the base of the big toe. The specific proportions of the femur, tibia, talus, and calcaneus are also part of the holistic structure of this limb. In contrast, "anthropoids" lack the longitudinal arch characteristic of the human foot. There is also a marked contrast between humans and "anthropoids" in the shape of the pelvic bones. In "anthropoids," the pelvis rotates as a whole around the femoral head when the body is upright. In contrast, the ventral part of the human pelvis retains the orientation of quadrupedal mammals even in an upright posture, while the dorsal part appears to be bent downward in comparison.

Of particular interest in this context is the foot of the mountain gorilla, *Gorilla beringei* Matschie. According to Gregory[11],

the mountain gorilla particularly clearly illustrates the evolution of the human foot from that of the "anthropoids." Kälin[13] (1949), working with an extensive collection of mountain gorilla specimens from the Forêt de Sibatwa (west of Lake Tanganyika) at the Musée du Congo Belge, was able to determine that all the structural features of a grasping limb are present here as well. As Piveteau[14] (1948) also emphasizes, the gorilla in particular demonstrates that, in the transition of a true "anthropoid" (pongid) to a terrestrial lifestyle, there are no discernible conditions that would favor the acquisition of an upright posture.

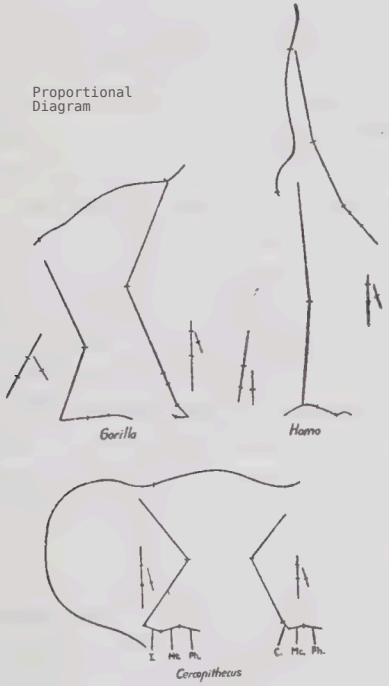

Fig. 3
Proportional diagram of Gorilla, Homo, and Cercopithecus. Designations for *Cercopithecus*: C = carpus, Mc = metacarpus, Ph = phalanges, T = tarsus, Mt = metatarsus. (After *Kälin*, 1952.)

An attempt at an evolutionary assessment of the compared extremities reveals a peculiar situation. Among those characteristics that do not clearly illustrate the progressive evolution toward bipedalism, features in humans stand out that, to a large extent, resemble those of the *Cercopithecidae* (Old World monkeys). These include: the size of the distal diaphysis angle, the steep inclination of *the tibial malleolar surface*, the slight outward rotation in the hip joint, and the more pronounced development of the *lateral condyle* of *the femur* compared to

to *the medial condyle*, with the condylar tangents diverging laterally; the shallower inclination of *the tuber axis* on the calcaneus; and the proportions of *the cuneiform bones I–III* as well as the *navicular bone of the tarsus*. Significantly, in humans, as in primitive catarrhines, the length of the hind limbs exceeds that of the forelimbs, whereas in *pongids* the proportions are reversed. And this is not merely a matter of the animal's habits but is rooted in anatomical factors: in pongids, the dorsal surfaces of the (mostly basal) phalanges of the hand are supported in the quadrupedal position, whereas in human infants in the corresponding posture—as in cercopithecids—the palmar surface of the hand rests on the surface (*Fig. 3*). The same applies to the hylobatids, which, despite their sometimes extreme specialization, have retained primitive features of the Catarrhines that have disappeared in the pongids. These circumstances seem to suggest that the actual precursor of human extremities did not correspond to the type of pongids that climb using a pushing-grasping technique, but was closer to an archetypal form of the climbing primate foot. (For the subgroups of the *Catarrhina*, see Table I.)

The structure of the human standing and walking limbs is one of the indispensable prerequisites for our upright posture. Without the acquisition of this posture—both while standing and walking—with arms and hands freed from bearing the body's weight, the way of life unique to humans would be inconceivable. Thus, the structure of the foot and leg also belongs to those biological peculiarities which, like the laws governing our physical growth, cranial structure, brain development, etc., form a holistic correlate to the distinctive nature of human environmental adaptation.

Following Weidenreich[15] (1924), it has been specifically claimed that the peculiarities of the human skull are more or less caused by a bend in the base of the skull, which in turn must be explained by the secondary acquisition of an upright posture. However, Dabelow[16] (1929; 1931) demonstrated through a series of examples that there is no general relationship whatsoever between the bend in the base of the skull and posture in vertebrates. The essential peculiarity in the external shape of the human skull can, for the time being, only be understood in light of the current facts of individual development. This primarily concerns the rapid growth of the brain, which in humans continues at an enormous rate even after birth until the onset of tooth replacement (at age 7!), while the masticatory apparatus and the entire facial region, during growth—

. In the skulls of pongids, by contrast, brain growth slows significantly soon after birth (reaching its final size by age 3!), while the masticatory apparatus and the entire snout grow rapidly during the course of tooth replacement. The brain weight of a human newborn is approximately 380 g, compared to 150 g in pongids. (The corresponding total body weights average 3,200 g and 1,500 g, respectively.) If we consider that the body weight of adult humans is no greater than the corresponding average for pongids, it becomes clear that the high brain weight of the human newborn is not merely related to total body weight, but must be interpreted as an expression of the unique centralization and differentiation of the fully developed human brain and as a correlate of mental behavior.

Time and again, attempts have been made to provide a causal explanation for the anatomical adaptations associated with upright posture based on the posture itself. In contrast, it cannot be emphasized enough that all attempts to construct the causal link decisive for the development of the human body form from the actual or supposed sequence of evolutionary processes fall far short of addressing the depth of the problem.

Compared to that of the pongids, the human total weight curve shows a significant excess in the first year of life, only to converge with the pongid curve later on. Thus, both in the womb and during the first postnatal year of human life, there is a striking intensification of overall growth compared to later stages. And this, like the newborn's inability to maintain an upright posture and its general "clumsiness," reflects what is essentially a fetal state which, as Portmann rightly emphasizes, characterizes humans in their first year of life as "secondary altricials." This, however, places us outside the pattern of behavior that applies to highly differentiated mammals and, to a large extent, to the great apes as well: the human infant lacks the altricial state, in which the organism is biologically independent from the moment of birth. And this constitutes a peculiarity of human behavior that is obviously related to the distinctive nature of the human form of existence. This must be initiated by the infant as early as the first year of life, accompanied by a gradual loosening of its ties to the environment. For humans learn, in part as early as the first year of life, to determine their relationships to the "environment" independently —that is, from an objectifying inner attitude—at will. A prerequisite for this psychological

development, however, is evidently that biological indeterminacy and plasticity, the absence of a one-sided adaptation to the environment, a lack of specialization, which must be "paid for" by great clumsiness and dependence on the mother's care.

It is significant that the "secondary nestling state" is overcome only during a period of psychological engagement with the environment, accompanied by the simultaneous acquisition of an upright posture and language. However, all attempts to derive human language from animal vocalizations miss the essential point. For the essence of language lies in the fact that, through the spoken word, it becomes a means of conceptual communication. Attempts to derive it from animal vocalizations therefore lead only to the sounds of emotion that humans also produce *alongside* language, but never to the word. From a *purely* biological standpoint, then, language must be "postulated as a human invention whose origin is shrouded in complete obscurity" (Portmann[5]). If the human organism were to correspond in its growth patterns to the behavior of mammals, then —assuming a constant rate of development in the womb—we would have to undergo a process that takes not just 9, but 21 months. From the moment of birth, our behaviors would then presumably be governed essentially by instincts and emotions. In this case, we would come into the world in a physical state in which, due to the dominance of instinctual drives, there would be no room for the development of objectifying behavior and the unfolding of the mental personality*.

The dental expert Adloff had long ago provided a detailed justification for the impossibility of deriving the uniform (homomorphic) character of the canine group in humans, as proposed by Gregory[11], from the differentiation of the pongid dentition (Fig. 4, Plate I; for *P. pekinensis*, the position of the canines has been slightly corrected. Note the hominid type of *the Pithecanthropus teeth*). In this configuration, the canines do not protrude, or protrude only slightly, beyond the dental arch and are, above all, adapted to the shape of the incisors. In the upper canine, this is also evident in the formation of a small cusp on the inner side (*tuberculum linguale*). In hominids, the lower first premolar is highly adapted to the proportions of the molars and is equipped with two strong cusps. In contrast, in the dentition of the pongids, the

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* Portmann has also drawn attention to the peculiar correlations between changes in mental activity and physical growth (particularly during puberty).

size and conical shape of the canines. These correspond to the gaps in the dental arches (*diastemata*) in the upper jaw. Furthermore, the canines and incisors are oriented obliquely. Another key point is the convergence of the first lower premolar and its predecessor, the first deciduous molar, with the shape of the *canine* (heteromorphic *canine group*).

In *Homo sapiens*, the arrangement of the teeth—the dental arches in the upper and lower jaws—forms a horseshoe shape, whereas in the pongids, the dental arches are relatively much longer and more or less U-shaped. In the hylobatids, they diverge markedly toward the back. The surface pattern of the lower molars typically features a predominantly cross-shaped or stair-step-shaped groove system with four cusps, whereas a different pattern prevails in pongids: two Y-shaped sections are connected by a segment running toward the lingual side (tongue side) (Fig. 17, Plate III). This groove pattern, known as *the "Dryopithecus pattern,"* includes five to six cusps, which, as in humans, may be accompanied by additional small elevations of varying phylogenetic significance. However, *the "Dryopithecus pattern"* is still very common in modern humans on the first lower molar. Important differences also pertain to tooth replacement.

The following table summarizes the number of cusps and roots for the anterior and posterior molars in hominids and pongids:

	Upper jaw			Lower jaw		
	1st premolar	2nd premolar	Molars	First premolar	Second premolar	Molars
1. Number of cusps						
Humans:						
Permanent teeth		2	2–4*	2, rarely 3	2–3	1–6**
Deciduous teeth		4				
Pongids:			4	4–5	5	5–6
Permanent teeth		2	4	1	2–4	5–6
Baby teeth		4	4			
Number of roots				1 + Rudiment	5	5-6
2. Number of						
Humans:						
Permanent teeth	1-3***	1-3	3	1	1	3
Pongids:						
Permanent teeth	2-3****	1-3	3	2	2	2

If we first highlighted some of the most important peculiarities in the biological structure and functional design of modern humans (*Homo sapiens* in the sense of anthropological taxonomy), this was intended above all to indicate that the human body forms a coherent system that

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* M_1: 4; M_2: 3–4; M_3: 2–4

** M_1: 4–6; M_2: 4–6; M_3: 1–6.

** most frequently 2.

*** most frequently 3.

can only be understood in relation to the spiritual realm. Nevertheless, there remains that extensive classification of the human body within the morphological and functional laws of the higher primates, which—in light of the general findings of phylogenetic research and paleontological evidence—justifies the assumption of a material and instrumental causal connection between the human organism and pre-hominid (pre-human) life forms.

Since the natural sciences say nothing about the ultimate reasons for the existence of entities found in nature, there is nothing to prevent the application of the concept of evolution to human physicality, even for religious reasons. A complete rejection of the concept of evolution as an explanation for human existence is no longer possible today, given philosophical clarity and an awareness of the seriousness and scope of scientific research.

In light of this situation, it is necessary first to address the general concepts, limits, and scope of phylogenetic research and then to examine the classification of primates as an expression of the graded similarity of anatomical plans. Only then can it be examined to what extent and in what sense it is possible to deduce the distinctive features of the biological type of modern human forms from general findings of phylogenetic research based on paleontological evidence from pre-hominid stages.

The view that the specific characteristics of the human form are more or less the product of the secondary uprighting of the torso in evolutionary history was, as already indicated, rejected as early as 1926 by the Amsterdam anatomist Bolk[8]. Instead, he reversed the hypothetical causal relationship between posture and form. “It was not because the body straightened up that the process of becoming human was prepared, but because the form became human-like that the body straightened up,” says Bolk. This led him to the much-discussed “fetalization hypothesis.” According to this hypothesis, humans are distinguished from apes by their persistence in a more or less undeveloped state. Or to put it another way: the other primates follow a path in their individual development that humans no longer traverse. Humans are thus, in a certain sense, a “sexually mature ape embryo.” This is said to be evident particularly in those characteristics that resulted from the upright posture and which Bolk describes as primary features. These include, for example, the ratio of brain to facial skull size, the configuration of the pelvic organs, the position of the foramen magnum, the lack of pigmentation and body hair, etc.

It cannot be denied that there is a partial truth in Bolk’s views. It rests on the fact that in human ontogenesis, the striking specia-

(i.e., adaptation to a specific environment) that are particularly characteristic of the skulls and extremities of the "anthropoid" apes are absent. Even a cursory examination shows that the human skull bears much more resemblance to the skull of a young ape than to that of an adult ape. The cause of this situation lies in the divergence in the growth rates of the brain and facial regions. In apes, the growth of the braincase lags far behind that of the facial region, whereas in humans, the brain continues to grow significantly after birth. Although this preserves the original proportions of the skull's shape, the concept of "fetal" does not apply to the enormous increase in volume of the human brain—and even less so to its intricate internal structure (Fig. 5).

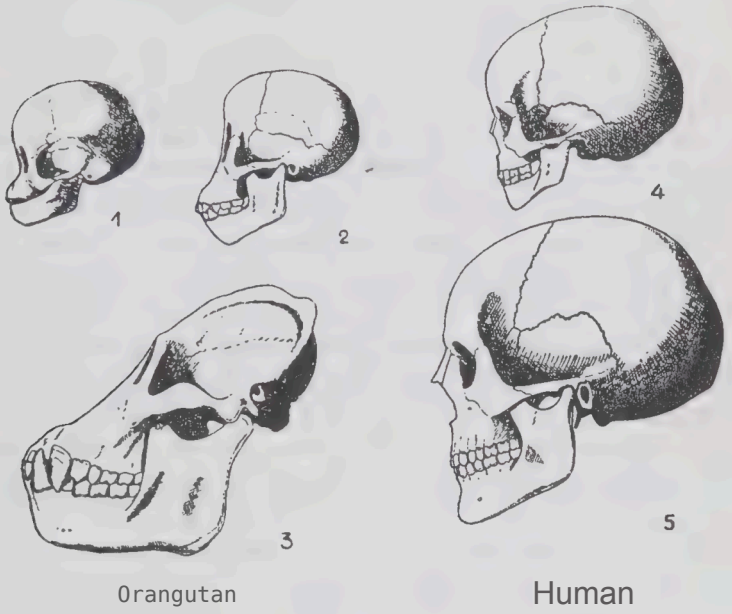

Fig. 5
Stages of individual development and adult form of the skull in orangutans (1–3) and humans (4–5). (After Naef, 1927.)

The principle of fetalization is also contradicted by the intensity of growth until the end of the first year of life, the distinctiveness of the human growth curve with the pubertal growth spurt, and, in particular, the proportions of the extremities with the **aforementioned** longitudinal growth of the legs.

Finally, it must be pointed out that there are characteristics which, although morphologically similar to embryonic states of other primates, were acquired through what is known as indirect development (e.g., in the structure of the pelvis, the construction of the tarsus, the mandible, etc.). There can be no question of an overall fetal state of the human physique.

Bolk attributes the extraordinary span of human adolescence, prime, and total lifespan—when compared to primates of a similar type—to a hypo-

thetical change in the interaction of the endocrine glands. The idea that transformations of the endocrine system play a role in human evolutionary history is, admittedly, difficult to refute. However, anyone who considers the unmistakable correlation between the human way of life and physical development cannot fail to see that this represents a biological reality that appears to be of the utmost significance for the development of the spiritual personality and for cultural tradition in the social interaction between generations.

III. CONCEPTS, SCOPE, AND LIMITS OF EVOLUTIONARY RESEARCH

The cultural implications of evolutionary theory can, in part, only be understood within the context of the intellectual history of the time, as shaped by the prevailing philosophical empiricism and the monistic-materialist worldview of the previous century. Thus, biological theory has been misapplied and extended to the most diverse realms of the human spirit: to art, literature, sociology, psychology, ethnology, etc., and even to the study of religion *[cf. O. Menghin, p. 231]*. Thus, in complete ignorance of its true substance, biological theory—combined with the doctrine of the "struggle for existence" ("struggle for life") as the primal source of all that exists—was transformed into a universal principle for which Western culture has paid with a sea of blood and tears. It is not the biological theory as such, but rather its untenable philosophical interpretation and application that is ultimately the reason why many intellectuals today are still driven to adopt a now-traditional defensive stance against the biologist's concept of evolution. It is entirely misguided to attempt to pit metaphysical concepts against the theory of descent. In this context, it should also be emphasized that the theory of evolution, as such, asserts only the material causal connection between various organisms in the sense of a continuity of living substance from species to species; the theory of evolution, as such, says nothing about the efficient causes of phylogenetic development.

The "family tree problem" must therefore not be confused with questions regarding the efficient causes (*causae efficientes*) in the process of evolution (the so-called "factor problem"). In its concrete application to specific cases, evolutionary theory has led to interpretations that, while mostly hypotheses, have in many instances been substantiated to such a high degree of probability that they attain the status of pragmatic (practical) certainty. This applies in particular to the phylogenetic history of narrower groups—

such as the equids, the elephantids, the camelids, the cetaceans, the rhinocerotids, etc. Many examples from invertebrates can also be cited here, such as among the protozoa, sea urchins (echinoids), brachiopods, snails (gastropods), bivalves (lamellibranchs), etc. Viewed as a whole, the phylogeny (evolutionary development) of each such group reveals certain predominant evolutionary trends in species differentiation—despite the radiation of forms—such that the corresponding changes appear as biologically adaptive adjustments to the conditions of specific habitats (biotopes), i.e., as specializations ("orthogenetic evolution").

Thus, the phylogeny of the equids is based primarily on the progressive reduction of the secondary toes, the strengthening of the middle toes, the formation of a bony bridge between the temporal fossa and the orbit, the transition to the hypselodont dentition, the increasing complexity of the enamel relief of the molars, a general increase in size, etc. In the evolution of the elephantids, the development of the second upper incisors into tusks is particularly striking. Correlated with this are a relative shortening of the skull, a steepening of the forehead, the development of the trunk, pneumatization of the skull bones, a posterior displacement of the external nares, increased complexity of the molar relief, a transition to horizontal tooth replacement, a reduction in the number of teeth, etc. It is clear that the remodeling of the limbs in equids effectively appears to be an adaptation to prolonged running across vast expanses (steppes, savannas), while the specialization of the dentition for a diet consisting of tough grasses—and, in some cases, foliage—may be particularly significant.

Within a group such as the equids, the elephantids, etc., the individual forms can be arranged in a series based on specific characteristics or combinations of characteristics in such a way that they show us the gradual transition from the least specialized form at one end to the most specialized form at the other end of the *series*. It follows, therefore, that although in such a group of forms all representatives are modified in the same direction from certain perspectives, the degree of specialization can nevertheless vary greatly. For example, in the Eocene of Egypt, there are tapir-sized elephantids of the genus *Moeritherium* with even less elongated second incisors in the premaxilla and, at the same time, six molars on each side in the upper and lower jaws, which are, of course, less specialized than the Miocene mastodon species with their considerably enlarged upper tusks and, in most cases, four molars in each half of the jaw. Specialization has reached its peak in the genus *Elephas*, where no more than two molars (each with up to about 30 transverse ridges) function simultaneously in each half of the jaw, and the upper tusks—with the loss of all other incisors—have occasionally grown into massive, excessive structures.

The crucial point in such cases, however, is that in our findings, the chronological sequence of the first appearance of the variously specialized forms — *with due reservation* —corresponds to their position in the evolutionary series. Thus, the archaic Moeritheria are known only from the Eocene, whereas *Mastodon* appears as early as the Miocene, and the genus *Elephas* in the Pliocene. There is therefore an obvious correspondence, a coincidence, between the first appearance of representatives of these groups—which vary in their degree of specialization—and their position in the evolutionary series. In such cases,

The series of forms is also referred to as *a series of stages*. However, based on consistent evidence from comparative anatomy and paleontology, the series of stages should be understood as an illustration of actual evolution. However, one must not succumb to the misconception that a series of stages should be interpreted *per se* as an illustration of a phylogenetic tree in the sense that the individual links in the series *must have developed in the same sequence and at the same rate*. This usually becomes clear when we extend our examination to different organ systems within the same group and then compare the results. Thus, it turns out that in the development of the tusks, *Palaeomastodon* does indeed follow *Moeritherium*; conversely, however, the convergence of the front molars toward the rear ones (molarization of the premolars) is more advanced in *Moeritherium*. One characteristic is more highly specialized in this genus, the other in that genus (cross-specialization). If the series of molars and tusks under discussion here were to be interpreted as illustrating a phylogenetic tree in the aforementioned sense, then the upper tusk of *Palaeomastodon* would have to have evolved from that of *Moeritherium*; conversely, the molars of *Moeritherium* would have to have evolved from those of *Palaeomastodon*. This is obviously impossible, and thus wherever a crossover in the direction of specialization between different organs of two species is demonstrated, it appears impossible that these species could be related to one another as ancestor and descendant . *The crossover of specialization is therefore an eminently important criterion for phylogenetic studies.*

The series of stages as such need not, therefore, represent an ancestral lineage in the sense of species that have progressively diverged; what it generally indicates is merely the direction in which certain characteristics or sets of characteristics were transformed within a group in the course of phylogeny. Thus, in the aforementioned series of stages among the Elephantidae, the individual members belong in part to different lineages that developed essentially in parallel but simultaneously. This does not rule out the possibility that one or the other of the known series of stages does indeed represent a genuine “ancestral series.”

The example of the Elephantidae clearly reveals to us that fundamental characteristic of life which impresses us as the ordering of the parts toward the harmony of the whole in terms of form and function—the holistic nature of life. For the development of the tusks would have made feeding difficult or impossible had a trunk not developed at the same time. The tusks and the trunk increased the weight of the head to such an extent that better anchoring of the head to the torso became necessary. To achieve this, a larger attachment surface for the neck muscles had to be created, which was accomplished by raising the occiput. In this way, the forehead also became steeper. Nevertheless, due to the progressive increase in body size, the head would likely have become too heavy had extensive air-filled cavities not developed simultaneously in the skull bones (pneumatization). The further transformations in the dentition, etc., are also partly correlated with the tusks.

Whenever a significant transformation of one part occurs in the history of a phylum, it is usually accompanied by coordinated transformations of other parts, such that the harmony of the whole—in terms of form and function—is preserved. In the grand scheme of phylogenetic history, *the whole* is thus continually reshaped into new harmonies. Evolution is a *holistic process* or, as Roux[17] (1915) put it: “Living beings are not music boxes with a thousand or a million songs,

which are calculated and adjusted for millions of needs that may arise in the course of a lifetime, but rather they are entities that can learn new songs every day."

IV. THE SYSTEMATIC RELATIONSHIPS AMONG PRIMATE GROUPS AND THEIR SIGNIFICANCE FOR THE PROBLEM OF HUMAN EVOLUTION

The diversity of hypotheses that have long been debated regarding the pathways and causality of human evolution leaves no room for any interpretation other than that the evolutionary assessments of morphological data by individual researchers have diverged widely. The cause of this situation lay in the prevailing lack of certainty and insight regarding the methodological principles without which sound phylogenetic research is impossible; however, the critical application of those principles presents particular difficulties precisely in the phylogeny of hominids. These difficulties stem primarily from the great discrepancy that exists between the taxonomic and systematic similarities between humans and the pongids that have come into focus, and the humans' characteristic peculiarities.

The classification of vertebrates is based primarily on the skeleton and dentition, while such important areas of biological knowledge as the centralization of the nervous system, the laws governing growth and their group-specific characteristics, as well as other aspects of great significance for understanding evolutionary stages and phylogenetic relationships, are disregarded in systematics as such. The fact that fossils consist essentially only of hard parts seems to account for their practical significance for classification. However, this significance already presupposes a general relationship between the morphological characteristics of the organs: the so-called *rule of correlation*. It states that a specific morphological state of an organ—within numerous limits, some of which can only be determined approximately—is linked to specific morphological states of one or more other organs that are functionally related to it, i.e., in correlation with it. Thus, from the shape of the sternum in birds, we can draw conclusions about the condition of the flight muscles and the ability to fly; indeed, in mammals, a single molar may, under certain circumstances, allow us not only to identify the species but also—if it is an entirely new form—to draw far-reaching conclusions about the structure of the soft tissues, the mode of life, body size, etc.

The rule of correlation is therefore particularly fruitful precisely in its application to the hard parts of vertebrates. It follows from the rule of correlation that, within certain limits, the zoological system is an approximate expression of the morphological correspondences and graded similarities of structural plans.

Each structural plan always refers to the basic morphological form, i.e., the *type of a specific systematic group* of organisms. The structural plans are therefore an expression of a system of higher- and lower-ranking, superordinate and subordinate, as well as co-ordinate morphological types. It therefore only makes sense to speak of a structural plan and a type in relation to a specific group. The type of a group—for example, fish, birds, annelids, butterflies, etc.—is never realized in its pure form. We grasp it only conceptually, in a mental image in which we synthesize the common characteristics of all subgroups and individual forms belonging to a particular group, as well as the original morphological characteristics of that group, in the construction of the type. For example, the type of birds includes all characteristics common to all birds, as well as a beak and a long caudal vertebra—two characteristics that were present in the primordial bird and thus appear to be original. Thus, the concept of type initially expresses the fundamental law of form for a specific group of living beings.

The subgroups and individuals belonging to a systematic category may, despite their shared type, differ from one another in a multitude of morphological characteristics; generally, the higher (and therefore more comprehensive) the systematic rank of the group, the greater these differences tend to be. Consequently, particularly in terms of external form, the difference between one species and another within the same group may be greater than that between a species from one group and a species from another group of the same rank. When comparing only their external forms, the sperm whale and the hazel dormouse—although both are mammals—are, on the whole, more dissimilar to each other than the hazel dormouse and the lizard. In the first comparison, these are representatives of the same type within the class of mammals; in the second case, however, they belong to different class types (the class of reptiles and the class of mammals). The same applies to the comparison of a wolf and a seal (both of which represent a type within the subclass of placental mammals) on the one hand, and a wolf and a marsupial wolf (which belongs to the subclass of marsupials) on the other. Systematics as such also contains no direct statements about the pathways of phylogenetic development. We must be aware of this situation when we see how “humans” are rightly classified by biologists as the hominid family within a separate group of primates. This is very useful for clearly highlighting the fundamental similarities in the structural plans of the human body and those of higher primates—provided we keep in mind that the statement: “Humans belong to the primates” is merely a statement of a biological type shared by humans and certain primates, but that all other aspects and particularities of human existence are deliberately set aside here.

In phylogenetic studies, the question of the concept and delimitation of species is also significant. It must be emphasized from the outset that a biological *concept of species* has absolutely nothing to do with the concept of species in the sense of metaphysical lines of thought (e.g., in the definitions of being in Aristotelian-Thomistic philosophy). The biological concepts of species are partly empirical-real in nature and partly nominalistic; their content is not the same across all fields of research. These are "open concepts" that are appropriate to the method and subject matter of scientific work. However, the never-ending discussions surrounding*"the"*concept of species clearly demonstrate that a universally satisfactory definition of it is impossible. Simpson[18] (1943) rightly emphasized the necessity of different concepts of species. In genetics, which primarily investigates the causes of racial and species formation in plants, animals, and humans, a concept of species has developed in which sufficient interchangeability of genetic material between individuals and races of a species constitutes the decisive criterion. *In the genetic concept of species, we understand a species to be a reproductive community in which every hereditary characteristic of a subgroup (race) or an individual can, in principle, be transmitted to all the offspring of any other subgroup or individual through interbreeding.*

This is a concept applicable only to natural form groups that can be distinguished from every other such group practically simultaneously, in the historical present, without transitional forms, and that are also reproductively isolated from one another. The numerous "borderline cases" are disregarded here. When comparing such "horizontal species," therefore, we consider form groups that lie within the same temporal horizon—that is, within one and the same cross-section of a branched phylogenetic system or "family tree." It is evident, however, that from a phylogenetic perspective, the immediate lineages of "horizontal species" converge extensively in the past and merge into other forms (ancestral species). In comparing paleontological records that relate ancestral forms to descendant forms, it is often possible to identify continuous transitional series. And in such cases of continuous series, the initial and final members are so different that they are generally regarded as representatives of different "vertical" species. But here we are dealing with a different concept of species, in which the boundary between species that merge into one another can only be fixed by convention: this is the *morphological-phylogenetic*

concept of species. It is thoroughly *nominalistic*, with the general rule being *that forms whose extreme variants exhibit approximately the same degrees of difference—as is the case with a group of living organisms that are as closely related as possible for the genetic species —are grouped together under the same species in the vertical transition*. Consequently, this leads to a certain material alignment with the genetic concept of species.

The zoological classification of animals illustrates the actual hierarchy of animal forms—in part—only in a very one-sided and imperfect manner, based on their graded morphological similarity. The evolutionary hierarchy of organizational complexity is thus expressed only to a limited extent in systematics.

A primary requirement in reconstructing phylogenetic relationships is to take into account, as far as possible, the entirety of the life forms in question using the rule of correlation—specifically, across the full range of ontogenetic stages (the adult form being the final one). For a specific phylogenetic relationship always pertains to the total scope of an individual's life history. However, phylogenetic relationships cannot be quantified based on aggregate degrees of similarity. Rather, each characteristic within the structure of the whole requires a differentiated evolutionary assessment. The significance of the characteristics always relates to the type of a systematic category, which corresponds to the meaning of a phylogenetic group*. With regard to a specific ancestral group, we can identify *typophane* traits—that is, those anchored in their morphological type—and *atypophane* traits, i.e., derived characteristics. The atypophane traits are further subdivided into characteristics of adaptation to a specific habitat—specializations *sensu stricto*—as well as into signs of an increase in the general level of organization in the sense of Franz's "elevation"**. Very

* It is also particularly important to note that there are differences in characteristics that are always associated with profound differences in certain structural plans of relatively high systematic rank, whereas other characteristics appear to be assigned to specific categories of relatively lower rank as general characteristics. Accordingly, we can distinguish between characteristics of different phylogenetic valence (Kälin[19], 1946). High brain development (cerebralization), the configuration of the pelvic bones, and the proportions of the "canine group"—particularly in the lower jaw in humans on the one hand—and the contrasting conditions in "anthropoid" on the other—are of higher phylogenetic valence than the position and shape of the frontal bone, the formation of the chin, or the large brain volume of certain Late Glacial and modern human races.

** The levels of elevation express a hierarchy that should not be confused with the systematic hierarchy; the levels of elevation largely correspond to the concept of morphological significance as defined by Portmann[20] (1942).

For example, in primary terrestrial vertebrates, the various specializations of the extremities during the transition to aquatic life (plesiosaurs, ichthyosaurs, cetaceans, pinnipeds, etc.) are striking. Elevation can also be described as "general adaptation." It manifests itself in a spatiotemporal expansion of ecological potential. (An evident example of elevation is the acquisition of homeothermy, which enables geographical expansion through the resulting independence from external temperature.) Elevation has become particularly striking in various orders of mammals through cerebralization. This manifests itself primarily as a relative increase in brain size, especially in the cerebral cortex.

However, as the work of Portmann[20] and Wirz[21] (1950) demonstrated, earlier attempts to determine a cerebralization factor [using methods by Dubois[22] (1897), Brummelkamp[23] (1939), and Anthony[24] (1938)) to determine the morphological significance of a group are insufficient. For mammals, as the first-mentioned authors demonstrate, we must for this purpose relate the weight of certain brain regions—namely that of *the neopallium* —as well as the total brain weight to the so-called base number* of the stem remnant (not to be confused with the brainstem as defined by anatomists). The level of organization of the modern human type, which far surpasses that of all prosimians and monkeys, is evident here in the values of the ratios (*indices*) obtained. In humans, the figure is 170 for the *neopallium* and 214 for the entire brain, compared to 49 and 66, respectively, for the pongids (see Table II)**.

Primates correspond to the systematic rank of an order (Ordo). This is followed, in descending order of rank, by the following major ranks: suborder (Subordo), infraorder (Infraordo), family (Familia), genus (Genus), and species (Species). In many cases, it is useful to illustrate the closer relationships between certain taxonomic categories at coordinated levels by introducing intermediate categories, e.g., by grouping several families into a superfamily, etc.

Following Pocock[26] (1939/41), we can now group primates into three suborders, which are listed along with the most important subordinate categories in the following table. (Fossil groups

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* The base value for the skeletal remnant is the lowest weight that the skeletal remnant would have in a placental mammal (insectivore) of the corresponding body size.

** According to Dubois, the cerebralization factor should be calculated using the formula

$$b = > \text{brain weight} \cdot 100 / \text{body weight}^{0.56}$$

assuming that the relational exponent 0.56 is constant. However, as Portmann[25] (1948) demonstrated, the relational exponent is not constant but depends on group-specific characteristics.

(are not taken into account!) In this context, the two suborders of lemurs and prosimians are often collectively referred to as *prosimians* ("prosimians").

Table I

Overview of the system of extant representatives of the order Primates

	Suborders *(Subordinates)*	**Subcategories** *(Infraordinates)*	Families *(Familiae)*
"Prosimians"	Lemurs = *Lemuroidea* **(Max Weber)** (1927/28)	*Lemuriformes* (Gregory) (1915)	**Tupaiidae* (Mivart) (1868)
			* *Lemuridae* (Gray) (1821)
			* *Indridae* (Burnett) (1828)
			**Daubentoniidae* (Gray) (1870)
		Lorisiformes (Gregory) (1915)	*Lorisidae* (Gregory) (1915)
	Long-legged = *Tarsioidea* (Max Weber) (1927/28)	*Tarsiiformes* (Gregory) (1915)	*Tarsiidae* (Gill) (1872)
	Monkeys = *Pithecoidea* (Pocock) (1939)	Broad-nosed monkeys = *Platyrrhina* (Hemprich) (1820)	Tarsier = *Callithricidae* (Thomas) (1903)
			Tail-wagging monkeys = *Cebidae* (Swainson) (1835)
		Narrow-nosed = *Catarrhina* (Hemprich) (1820)	*Monkey monkeys = *Cercopithecidae* (Gray) (1821)
			Great apes in the broader sense
			"Great apes" = *Pongidae* (Elliot) (1913)
			"Great apes" in the narrower sense
			Long-armed monkeys = *Hylobatidae* (Blyth) (1875)
			*Humans = *Hominidae* (Gray) (1825)

For morphological reasons, it is often appropriate to classify the groups marked with * into the category of superfamilies (which rank between suborders and families). In this sense, following Simpson[27] (1945), the following distinctions can be made: the superfamily *Tupaioida* (including the family *Tupaiidae*), the superfamily *Lemuroidea* (including the extant families *Indridae* and *Lemuridae*, as well as the exclusively fossil families *Plesiadapidae* and *Adapidae*), the superfamily *Daubentonioidea* (including the family *Daubentoniidae*), and the superfamily *Cercopithecoida* (including the family *Cercopithecidae*). It is equally justified to combine the extant families *Hylobatidae* and *Pongidae* with the fossil family *Dryopithecidae* into the superfamily *Pongoidea*. In this sense, humankind (*Hominidae*), together with the fossil *Australopithecidae*, also forms the "morphological superfamily" *Hominoidea*.

Following Simpson's[27] major work on the classification of mammals, the term *Anthropoidea*, introduced by Mivart[28] (1864), is frequently used again for the suborder of monkeys (*Pithecoidea*). As Montandon[29] (1943) rightly points out, this is misleading because the "great apes" have long been referred to as "anthropoids" as well. The terms "anthropomorphic" and "anthropoid" apes are ambiguous. For example, Weinert and Martin classify the Pongidae as the family*"Anthropomorpha"*; in contrast, these authors use*"Anthropoidae"*as a generic term that includes, at a minimum, the family of gibbons. Other authors, such as O. Abel and Montandon, conversely use the term*"Anthropomorphae"*as a generic term for both Pongidae and Hylobatidae. However, according to the internationally accepted rules of zoological nomenclature, the term *"Pongidae"* (provided we assign this group the systematic rank of a family) cannot be replaced by any other scientifically valid family name; it alone is correct.

The grouping of the *Hominidae* and *Pongidae* into the superfamily *Hominoidea*—as Simpson[27] has recently done once again—is also unfortunate. This designation, on the other hand, should be used, as mentioned, as a narrower grouping for the *Hominidae* and the fossil *Australopithecidae*. Unfortunately, this group—which is currently the focus of research—is listed by Simpson, just like the *Hylobatidae*, only as a subfamily of the Pongidae.

The following table, based on data from Wirz[21], shows the most important brain indices as indicators of the level of organization for the major groups of extant primates.

Table II

Categories	Indices*			
	Neopallium-Index	Olfactory brain Index	Cerebellum-Index	Index of the Remnant of the Brain Stem
"Prosimians" *(Prosimia)*	13.5	0.96	3.24	3.72
Roll-tailed monkeys *(Cebidae)*	53.7	0.268	7.25	6.92
Dog-faced monkeys *(Cercopithecidae)*	38.3	0.229	4.44	5.12
Human-like apes in the strict sense *(Pongidae)*	49.0	0.037	7.59	4.47
Human	170.0	0.229	25.7	10.00

The total brain indices yield the following figures:

Tarsiidae	18.5	*Cebidae*	64.4	
Lorisidae	20.2	*Cercopithecidae*	§2.3	58.4
Lemuridae	24.0	*Hylobatidae*	50.8	
Callithricidae	21.1	*Pongidae*	66.1	
		Humans	214.0	

* These indices are calculated by dividing the weight of the relevant section by the weight that the brain stem remnant of an insectivore of corresponding body size would have.

All prosimians are distinctly lower-ranking mammals. This is shown by the mean values for the *neopallium index*(13.5), *cerebellum index*(3.24), brain stem index (3.72), and total brain index (18.5–24). Compared to other primates, they exhibit, as primary mammalian characteristics, a wide, open connection between the eye socket (*orbit*) and*the temporal fossa*. The upper opening of the lacrimal duct lies outside the eye socket. Hands and feet are prehensile organs that are specialized in various ways for an arboreal lifestyle. The numerous and divergent peculiarities in the dentition of most prosimians also reflect a high degree of specialization. However, the oldest known prosimians from the Eocene period in Europe (e.g., from the Swiss Bohnerz deposits at Egerkingen) and the Americas still exhibit relatively primitive dental configurations in terms of tooth count: two incisors, one canine, four premolars, and three molars in both the upper and lower jaws. These proportions are typically represented in a dental formula as follows, without specific consideration of the deciduous dentition:

2.1.4.3.

2.1.4.3.

With the exception of the marmosets (*Callithricidae*), the *Pithecoidea* occupy a significantly higher level of organization than all prosimians. This is demonstrated in particular by the indices for the *neopallium* and total brain volume. In terms of their level of organization, the marmosets are roughly at the mid-level of the prosimians. In contrast, the gap between the two families of broad-nosed monkeys (*Platyrrhina*) is very large, with the capuchin monkeys (*Cebidae*) occupying a very high position; their level of development corresponds at least to that of the pongids. The grouping of *the Callithricidae* with the rest *of the Pithecoidea* is justified primarily by the characteristics of the skull, dentition, and reproductive organs. The *Platyrrhina* are generally distinguished by the significant distance between the nostrils; in the *Catarrhina*, only a narrow septum remains between the more forward-facing openings. The following is a summary of the most important general (diagnostic) characteristics of the typical representatives of the two suborders within the *Pithecoidea*:

Platyrrhina

1. Three premolars;
Dental formula: 2.1.3.3. *(Callithricidae)*

2.1.3.3.

or **2.1.3.2.** *(Cebidae (Cebidae)*

2.
2.1.3.2.

2. The malleus forms a short, ring-shaped external bony auditory canal (*annulus lus tympanicus).*

Catarrhina

1. Two premolars;
Dental formula: 2.1.2.3.

2.1.2.3.

A long groove forms the lar of the

2. The malleus forms of the external bony auditory canal.

3. *Bulla tympani* (eardrum sac) distended.
4. In the lateral wall of the skull, the suture between the temporal bone and the frontal bone is predominant.
5. The opening between the orbit and the temporal fossa is large.
6. Placenta: primary *disc placenta.*

3. *Bulla tympani* not distended or, at most, only slightly distended.
4. In the lateral wall of the skull, the suture between the zygomatic bone and the parietal bone is predominant.
5. The opening between the orbit and the temporal fossa is small.
6. Primary *and* secondary *discoplacenta.*

In terms of morphological significance, the *Catarrhina* clearly comprise two main groups, the lower-ranking of which, according to Simpson, can be classified as a single family: the *Cercopithecidae* (monkeys). As Table II shows, the low evolutionary stage of the dog monkeys is evident in *the neopallium index*. All higher *Catarrhina* (*Pongidae* and *Hylobatidae*) are characterized by a distinctly underdeveloped olfactory brain (mean index 0.037 compared to 0.229 in the Cercopithecidae). The exceptionally low value of the entorhinal cortex index in the Pongidae is certainly an expression of secondary atrophy and reveals a one-sided developmental trend. In contrast, the human entorhinal cortex is much closer to the archetypal state of mammals. The Cercopithecidae are a fairly diverse group. This diversity allows for their division into four subfamilies: *Cercopithecinae*, *Papioinae*, *Semnopithecinae*, and *Colobinae*. Notable here are the specializations of the baboons (*Papioinae*), with their tusk-like canines and long snouts.

A large number of fossil *Catarrhina* specimens have been identified through jaw fragments and teeth found in Europe and Asia. These include the *Dryopithecidae*, whose dentition is generally not yet as highly specialized as that of modern pongids. In some cases, the structure of the dentition resembles that of gorillas; in others, it is more reminiscent of chimpanzees or orangutans.

For some finds of particular significance, the question of taxonomic classification still presents certain difficulties. Foremost among these is the lower jaw of *Parapithecus fraasi*, known since 1911 from the Lower Oligocene of Egypt. The low height of the mandibular ramus suggests a very primitive state, but the dentition—particularly due to the presence of five cusps on the molars—already corresponds to the *Catarrhina* type. The low height of the incisors, the weak specialization of the relief pattern on the molars, and the absence of tooth gaps leave open the possibility that *Parapithecus* largely corresponds to a general ancestral form of higher primates. In contrast, the classification of *Propliopithecus* (from the Oligocene) and *Pliopithecus* (from the Miocene) as hylobatids has become highly doubtful due to Hürzeler's as-yet-unpublished studies. A direct genetic relationship to the hominids, as Remane[30] (1922) already demonstrated, cannot be assumed, contrary to the opinions of Naef[31] (1926), Gregory[32] (1926), and others.

In recent years, certain primate remains from the Miocene of Kenya (Africa) have become of great interest. As early as 1933, Hopwood[33] had described three genera of catarrhines from Koru in Kenya: *Proconsul*, *Xenopithecus*, and *Limnopithecus*. Later, remains of the same genera from the Lower Miocene of Rusinga Island and adjacent areas were added; these were described by MacInnes[34] (1943). The lower jaw remains of *Limnopithecus legetet* are striking for the distinct formation of two cusps on the first lower premolars in the deciduous dentition, as well as for the shape and arrangement of the cusps on the first and second lower molars. These characteristics are already similar to those of the human type.

Our knowledge of *the* so-called *"Proconsul Group"* has been supplemented in key respects by the British-Kenya Miocene Expedition (1947–48). We owe the commendable description of this valuable material primarily to Le Gros Clark[35] and

Leakey (1951). For the first time, a braincase of **Proconsul africanus** was also found, which lacks the characteristic supraorbital ridges of the pongids and cercopithecids. Features reminiscent of the Cercopithecidae include, for example, the shape of the bony nasal opening and the form of *the cuboid* (cuboid bone) and the *talus* (ankle bone). Striking is the shape of the mandibular symphysis (*Proconsul nyanzae*), which in some respects resembles that of humans.

As Heberer[36, 37] (1951) rightly emphasizes, the sparse limb remains seem to suggest, for the time being, that the mode of locomotion of the *Proconsul group* did not yet correspond to the "brachiating type" of the Pongidae.

Alsaticopithecus lehmanni, described by Hürzeler (1947) from the Eocene of Alsace, is possibly a precursor of the post-Eocene catarrhines.

V. THE TIMELINE OF HUMAN EVOLUTION

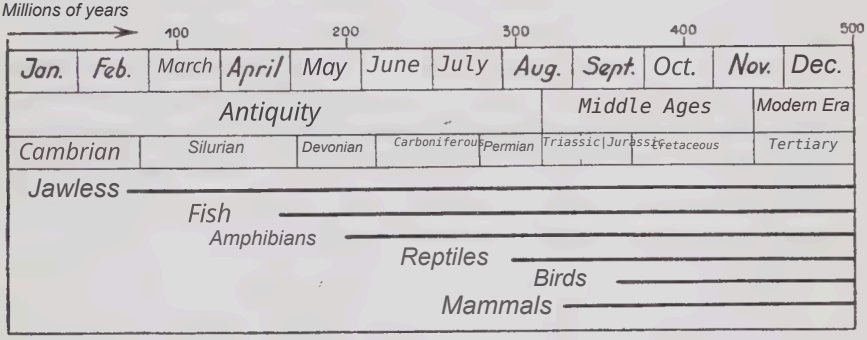
The most important records of human evolutionary history are fossils, i.e., remains of bodies from geological prehistory embedded in stratified rocks. (Other preservation methods, such as inclusion in glacial ice, earth wax, fossil resins, etc., or dry mummification, are irrelevant for assessing human evolutionary history.) To the extent that we can today attribute fossils with certainty to humans, they are invariably remains from the Ice Age (Pleistocene, Diluvium). Organic remains from more recent times are referred to as subfossils.

Over time, fossils undergo certain chemical changes, the nature, rate, and extent of which vary greatly; however, the proportion of inorganic substances generally increases significantly due to the incorporation of mineral salts (calcite, silica, etc.). It has recently been demonstrated that, under certain conditions, the relative ages of Pleistocene fossils can be determined by their fluorine content. This method, first applied by Oakley and Hoskins[38] (1950), has also proven successful in determining the relative ages of important fossil human finds.

As Zeuner[39] (1946) in particular has shown, there is no longer any doubt that the ages of rocks calculated using physical methods—namely, based on the radioactivity of uranium ores—approximate reality. The total age of the Earth may be estimated at approximately 2,000 million years. By far the largest part of this immense span of time is represented by rocks that contain no definitive remains of living organisms. In contrast, sedimentary rocks were deposited over the last 500 million years,

whose relative ages have long been determined by the various index fossils they contain. This stage encompasses the sources of the history of life, which spans three geological eras: the Paleozoic Era (approximately 300 million years), the Mesozoic Era (approximately 130 million years), and the Cenozoic Era (approximately 70 million years). The geological eras are further subdivided into various periods, and these into epochs. Table III shows the relative

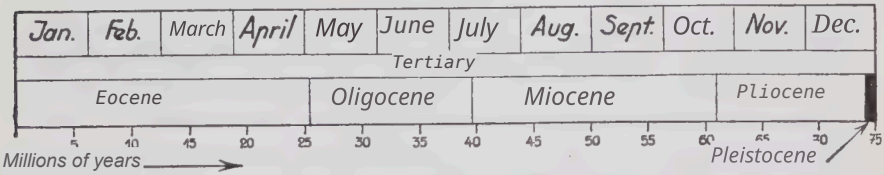
Table III



The geological time scale from the beginning of the Paleozoic Era (approx. 500 million years) compared to a calendar year. Based on research findings regarding the radioactivity of rocks, the period of Earth's history preceding the Paleozoic Era can be estimated at approximately 1,500 million years. Adapted from *B. Peyer*, 1944.

The duration of the geological eras and their periods since the beginning of the Paleozoic, presented as a time-lapse, i.e., vastly compressed into a calendar year. The first appearance of the vertebrate classes is also indicated. Table IV shows the division of the Tertiary, again compressed into a calendar year.

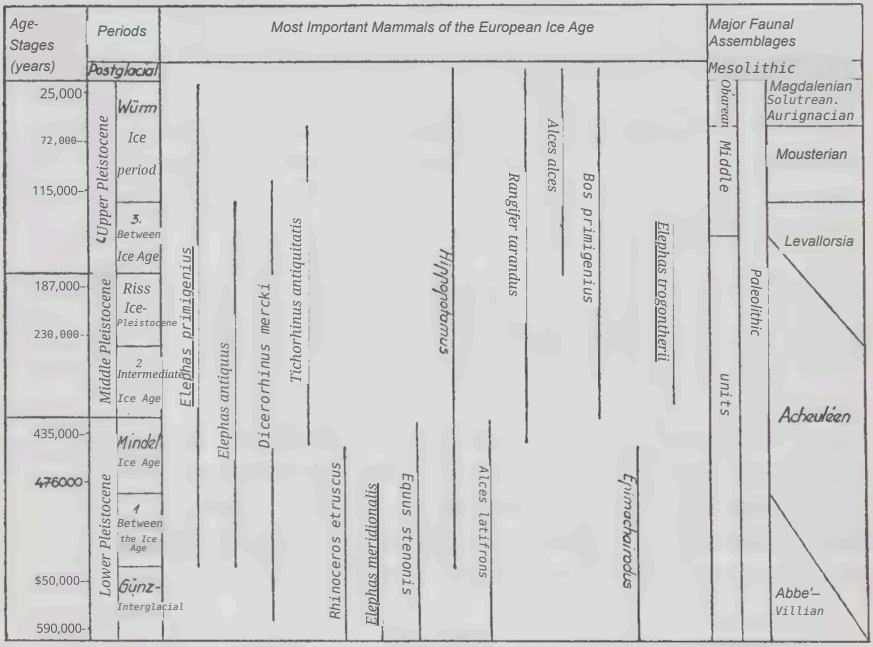
Table IV



The geological time scale from the beginning of the Tertiary Period to the end of the Ice Age (Pleistocene) compared to a calendar year. Based on B. Peyer, 1944.

We see that the appearance of humans in the Pleistocene—even though today, through the power of technology, they are giving the ancient Earth a new face—is, from a geological perspective, an event of the very recent past *[see H. Breuil, p. 259 ff.]*. The marked climatic fluctuations of the Pleistocene allow us, at least with regard to conditions in Western Europe, to divide this period geologically into four glacial periods—the Günz, Mindel, Riss, and Würm glacial periods—as well as three interglacial periods. The latter are characterized by glacial retreats, while the ice ages are characterized by glacial advances; however, within these time periods, a further subdivision into advances and retreats of lesser magnitude can be identified. Table V shows the geological and faunal

Table V



The classification of the major cultures and the temporal distribution of the most important mammals in the European Pleistocene. Based on the descriptions by *E. Kuhn* in: The Fauna of Prehistoric Settlements in Switzerland, special reprint from: O. Tschumi, Prehistory of Switzerland, Vol. I, 1949, Huber & Cie., Frauenfeld.

and the cultural division of the Western European Pleistocene. Admittedly, there is already a significant deviation in northern Germany, in that a separate Günz advance does not occur there. Even at the beginning of the

Pleistocene, a very warm climate prevailed in Western Europe; the most important mammals found include the southern elephant (*Elephas meridionalis*), rhinoceroses (*Rhinoceros etruscus*), a zebra (*Equus steronis*), and saber-toothed cats (*Epimachaerodus*) with dagger-like, protruding upper canines. From the first and second interglacial periods, the following are particularly noteworthy: the forest elephant (*Elephas antiquus*) and another elephant species (*Elephas trogontherii*), the Merck's rhinoceros (*Dicerorhinus mercki*), as well as—as an unmistakable sign of a still relatively warm climate—the hippopotamus (*Hippopotamus amphibius*) and various deer, horses, etc. The onset of a new ice age always brings a severe and prolonged cooling to the mid-latitudes of the Northern Hemisphere; the climate becomes cold and damp, and the fauna is characterized in part by distinctive, striking adaptations to the harsh environment. The most notable examples here are: the mammoth (*Elephas primigenius*) with its very long-haired coat, fat deposits, and anal flap; the woolly rhinoceros (*Tichorhinus antiquitatis*) with closable nostrils; and another rhinoceros species of enormous proportions (*Elasmotherium sibiricum*). The second interglacial period was particularly long-lasting. The glacial expansion during the ice ages was particularly evident in the deposition of moraines; during the glacial and interglacial periods, rivers deposited gravel and eroded it into terraces. Outside the glacial zones, loess blankets formed in steppe landscapes from dust blown by the wind.

We find cultural artifacts—especially stone tools—far more frequently than the physical remains of early humans. At various sites, some of which are outside Europe (e.g., in East Africa), these artifacts reveal essentially the same major stages of development in the same sequence, despite vastly different climatic conditions. In Western Europe, they reveal three main stages of*the Paleolithic*: Upper, Middle, and Lower Paleolithic. The subsequent stages of*the Mesolithic* and*Neolithic* already fall within the geological present and belong to fossil human races that are indistinguishable or difficult to distinguish from certain modern forms of humanity. During *the Paleolithic*, stone tools were primarily produced by skillful flaking. In the Neolithic, stone was ground for the first time. The Upper Paleolithic already featured many bone tools and artistic representations, some of which demonstrated highly advanced techniques, such as rock paintings and drawings, ivory carvings, etc.

The Early Paleolithic was initially dominated by the culture of the

hand axes, which were initially still very crude and sometimes weighed several pounds. They were made from the core of worked stones. The oldest hand axes correspond to the *Abbévillian (Chellean)* cultural phase. The hand axes of the *Acheulean* are somewhat better worked, with finer and more numerous flakes. They reach their pinnacle in the elegant, meticulously worked, lancet-shaped hand axes of *the Micoquian*. In the Clactonian, instead of the core of rock nodules, flakes separated from them are primarily utilized, which gives the stone tool industry a different character than that of the hand-axe-using groups. However, the occasional working of flakes is already evident in *the Acheulean*. In the Middle Paleolithic, the use of core pieces is increasingly supplanted by the more advanced flaking technique characteristic of the *Levalloisian*. These are primarily flattened pieces with an oval or elongated outline and a prepared striking base, but with relatively rarely retouched edges. Although still simpler during the third interglacial period in Western Europe, the typical elements of *the Levalloisian* also show increasing refinement with the onset of the Würm glaciation, and at the height of the Middle Paleolithic, Levalloisian forms are found associated with hand axes and small, well-retouched elements, particularly with beautiful points and scrapers: these are the defining elements of the classical *Mousterian*. Incidentally, elements of *the Acheulean* persist in part well beyond the beginnings of the *Levalloisian* into the last interglacial period.

The people of the Upper Paleolithic correspond anatomically to a large extent to modern racial types; they all belong to *the Homo sapiens type*. In Western Europe, based on the sites in France, the Upper Paleolithic is typically divided into the Aurignacian, Solutrean, and Magdalenian. The characteristic stone tools here are the stone blades derived from the "Audi-Aubri point" of the Mousterian. They are long and prismatic, very finely and steeply retouched. Some appear constricted and also show retouching on the narrow side, resulting in forms such as drill points and blade scrapers. In addition, there are keel scrapers and miniature blades; furthermore, the working of bone, ivory, and horn becomes widespread. While it was previously believed that there was a general temporal and spatial separation between handaxe cultures (industries à bifaces) and blade cultures (industries à éclats), it has become increasingly clear that both types of stone tool technology were already present during the first interglacial period (J. R. Braidwood[40], 1946). The claim that flake-blade cultures are tied to the Neanderthal type has also proven to be erroneous; it is refuted, for example, by the discovery at Fontéchevade of the "Tayacien" culture (Acheulean) by Miss Henri-Martin[41] (1946). Even in Europe, there are distinct mixtures of both tool types (H. L. Movius[42], 1949); the same has been demonstrated in Africa for the Belgian Congo (C. van Riet Lowe[43], 1943) and Rhodesia (J. D. Clark[44], 1939, and N. Jones[45], 1938). On the other hand, as H. Breuil

and G. Zbyszewski[46] (1942) demonstrated that the Mousterian technique persisted throughout the Würm Glacial Period in Portugal. The relationship between time and cultural phase cannot, therefore, be fitted into a rigid schema.

Different views still exist today regarding the lower boundary of the Pleistocene; for example, in the new edition of M. Boule's classic work, *Les hommes fossiles* (1946), dates the start of the Early Pleistocene to the Riss Glacial Period. This naturally shifts the definitions of the Middle and Late Pleistocene as well. However, the classification used in Table V has now become the standard.

VI. THE PALEONTOLOGICAL RECORDS OF HUMAN HISTORY

The remains of fossil humans allow us to distinguish three main types, around which the remaining finds can be grouped according to their general form: the *Archaeanthropi* (*Pithecanthropus group*), the *Palaeanthropi* (*Neanderthalensis group*), and the *Neanthropi* (*Sapiens group*). However, there are also finds that, in terms of form, occupy to a certain degree an intermediate or mediating position relative to the

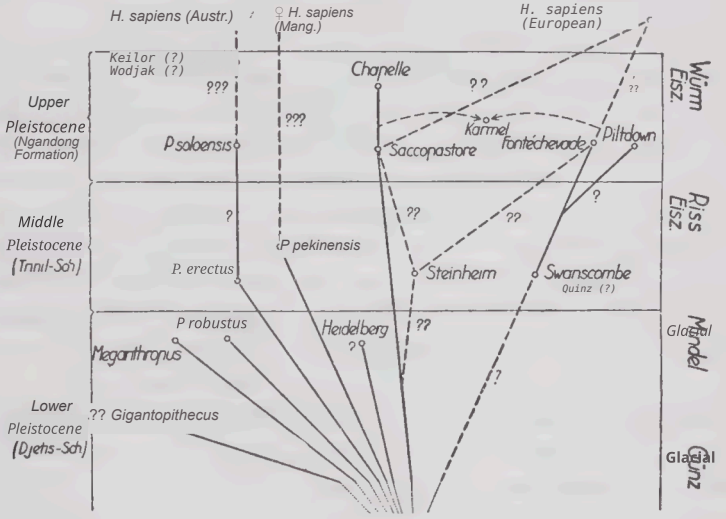


Fig. 6

Scheme of the chronological classification of the most important hominid fossils within the Pleistocene. This period spans approximately 500,000–1,000,000 years and allows for the distinction of four major glaciations in Western Europe, which are indicated on the right side of the scheme. (The main Pleistocene strata of Java are listed on the left.) The question marks next to the reference lines are inversely proportional to the probability of the respective phylogenetic interpretation.

types. Figure 6 shows the main forms of fossil humans from the Paleolithic period, arranged according to their chronological placement within the Pleistocene.

When comparing skulls, it is essential that the objects be oriented consistently. The Frankfurt horizontal plane (ear-eye plane) is best suited for this purpose. It is defined by the lowest point on the rim of the left orbital cavity and the highest point of the bilateral openings of the external auditory canal. The skulls must therefore be positioned so that this plane runs horizontally (as has been done in all illustrations of hominids in this chapter).

Among the ratios describing skull proportions, the length-to-width index deserves special mention. It is calculated using the formula

$$\frac{\text{maximum skull width}}{\text{maximum skull length}} \times 100$$

Depending on the value of the index (calculated ratio), we classify the skull as dolichocranial (index x to 74.9), mesocranial (index 75.0 to 79.9), or brachycranial (index 80.0 to 84.9). The crown height corresponds **to the** maximum vertical dimension measured perpendicular to the greatest cranial length.

1. THE ARCHAEANTHROPI (PITHECANTHROPUS GROUP)

Around the turn of the century, many anthropologists saw confirmation of their phylogenetic speculations in the highly controversial material that the Dutch military physician Dubois had discovered between 1891 and 1892 on the island of Java near Kampung Trinil on the Solo River. The finds consist of a calotte (skull cap), a femur (thigh bone), and a molar, which Dubois[47] (1894) described under the name *Pithecanthropus erectus*[*]. A fragment of the lower jaw, discovered as early as 1890, only came to light later. The age of the Trinil strata, as determined by Koenigswald[48] (1935) thanks to excavations carried out by the Geological Survey in the Dutch East Indies, undoubtedly corresponds to the Middle Pleistocene. We owe an excellent summary of the geological conditions and the chronological classification of *the Pithecanthropus remains* from Java to Mohler[49] (1946). The flatness of the forehead and the apparent small size of the brain left the door wide open to speculative imagination, given the great age of the specimens.

Soon an enormous body of literature on *Pithecanthropus* emerged; “the

* According to v. Koenigswald, the aforementioned molar and two other molars (one molar and one premolar) frequently attributed to Pithecanthropus do not belong to this species. The premolar exhibits human characteristics, while the molars largely resemble those of chimpanzees.

The "Trinil Ape-Man" was soon presented as the "missing link" between humans and anthropoid apes. Because of the outline of the cranial vault as viewed from above, many have assumed closer relationships to the hylobatids. Even in more recent times, Dubois[50] (1937) described the find as a representative of this ape family, a gigantic gibbon. However, Schwalbe[51] (1899) was already able to show that the cranial vault, measuring 183 mm in length and 135 mm in width, still falls within the range of variation for modern humans. Although the cranial capacity, at 1,000 ccm, is still well above that of an "anthropoid" ape, it is nevertheless lower than the average for modern human races. Also striking are the prominent bony ridge above the eye sockets (*torus supraorbitalis* = supraorbital ridge) and the flatness of the forehead. Precisely because of the similarity in shape between the cranial vault and that of the hylobatids, the "gibbon hypothesis" has become untenable according to Haller's Law with regard to body size; a gibbon with a femur length of 455 mm, as found in *Pithecanthropus erectus*, would have had to possess a much smaller brain for reasons of comparative anatomy. Although the femur is certainly human in shape and size, this initially could not be taken as conclusive evidence, since its affiliation with the other remains is not established beyond a shadow of a doubt. After all, this also applies to the four additional femur fragments, most of which Dubois had rediscovered in his old Trinil collection (as late as 1932!). Since 1936, we have been indebted to the distinguished geologist and anthropologist G. H. R. von Koenigswald[52] (1940) for a whole series of additional *Pithecanthropus* finds from Java. The most important remains of fossil humans from the Javanese region are compiled in Table VI according to their classification into the Lower, Middle, or Upper Pleistocene. They originate from three main

Table VI

Sites and Chronological Classification of the Most Important Fossil Hominid Finds in Java

Geological stages	*Pithecanthropus erectus* Dubois	*Other species:*
Ngandong Stage (Upper Pleistocene)		*Pithecanthropus soloensis* (Oppenoorth). *Finds "I–V": 5 skulls,* area around Ngandong on the left bank of the Solo River (Oppenoorth 1931–1932), later: *Finds "VI–XI": 6 skulls* (v. Koenigswald).

Trinil Stage (Middle Pleistocene)	*Find "A": Lower jaw*, vicinity of Kedoeng-Broeboes between Solo and Surabaya (Dubois 1890)*.	
	Find "I": Skull, bed of the Solo River near Kampung Trinil, 10 km west of Ngawi (Dubois 1891); also a femur (1892), two molars**, and one premolar**.	
	Find "II": Skull, approx. 500 m downstream from Kampung Bapang on the Tjemoro River, near Sangiran, approx. 12 km north of Surakarta (v. Koenigswald 1937).	
	Find "III": Skull, behind Kampung Tandjoeng, in the vicinity of Sangiran, approximately 12 km north of Surakarta (von Koenigswald 1938).	
Djetis Stage (Lower Pleistocene)	*Find "B": Lower jaw*, west of Kampung Kertosobo, near Sangiran, approximately 12 km north of Surakarta (von Koenigswald 1936).	*Meganthropus palaeojavanicus* Weidenreich. *Mandible fragment*, near Sangiran (by Koenigswald 1941). *Pithecanthropus dubius* v. Koenigswald. *Mandible fragment*, 1939.
		Pithecanthropus robustus. Skull, formerly designated as *P. erectus "IV,"* near Sangiran, approx. 12 km north of Surakarta (von Koenigswald 1939).
		Skull: Pithecanthropus child ("Homo modjokertensis"), north of Klagenblandong, approx. 12 km east-north-east of Modjokerto (von Koenigswald 1936).

* Classification within the Trinil Stage is not entirely certain.

* * Attribution to *Pithecanthropus* highly questionable (von Koenigswald[52] 1940).

Layers of different ages: Djetis, Trinil, and Ngandong layers. The lowest cranial capacity (volume of the cranial cavity) known to date from a Pithecanthropus find is found in Skull "II," with only 775 ccm.

However, this does not allow us to conclude that there is a lack of intellectual abilities. The enormous range of variation in brain weight among modern humans alone makes it clear that a merely quantitative assessment of the brain within broad limits does not permit any definitive conclusions about the functional capabilities of this central organ. Inaba[53] (1927) found a brain weight of only 850 g in a woman of normal intelligence at the Vienna Neurological Institute, and Tappeiner[54] (1899) recorded female minimums of 950 g in Tyrol (in women who were able to perform their daily work normally). On the other hand, there are individuals with intellectual disabilities whose brain weight exceeds 2,000 g. The view popularized by Dubois[55] (1930)—according to which brain volume in human evolutionary history increased in leaps and bounds through successive doublings of the number of nerve cells—has become entirely untenable. It was based, among other things, on the assumption—which is improbable for anatomical reasons—that the body weight of *Pithecanthropus erectus* was 108 kg. Given the approximate body size inferred from the femur, this would require limb proportions that are foreign to the evolutionary trend of hominids as well as to the pre-hominid stages of development.

"Find IV" is particularly notable for the shape of its dental arch. It is very elongated, and its sides run almost parallel. Much discussion has centered on the presence of a gap of approximately 6 mm in front of the upper canine. The canine itself, however—as do the individual teeth in general—exhibits hominid characteristics. The cranial capacity is only approximately 880 ccm. The flatness of the forehead and the prominence of the supraorbital ridge are immediately apparent in Weidenreich's reconstruction. The massiveness of the bones is particularly striking. The aforementioned peculiarities of the dentition and the robustness of the entire skull justify our classification of this find, in agreement with Weidenreich[56] (1945), as a distinct form within the group: *Pithecanthropus robustus* (Fig. 7 below, Plate I).

Pithecanthropus erectus has been seen in a completely new light since a new *human fossil* was discovered *in China* (Fig. 7 above, Plate I). In 1903, the paleontologist Schlosser had found a peculiar tooth among bone material that had been acquired from a Chinese pharmacy and likely originated from the Beijing area. Schlosser left open the question of whether it was a previously unknown large ape or a primitive human form. It was not until 1926 that Zdansky discovered two human-type teeth in fossils from near Beijing. A third tooth was discovered in 1927 by Bohlin and described in the same year by Black[57] under the name *"Sinanthropus pekinensis."* The site is located near Chou-Kou-Tien, approximately 40 km southwest of Beijing. It consists of fissures in the limestone of the earliest Paleozoic. The investigations were conducted at various locations. By far the most productive was "Site 1." The fissure is up to 50 m long and interspersed with limestone and boulders

and red clays. At certain points, thick layers of ash are found. In total, remains of about 100 vertebrate species, including over 80 mammals, have been identified. Based on this fauna, Teilhard de Chardin[58] (1937) dated the period of deposition to the Early Pleistocene. The animal fossils fall between the fauna of the Upper Pliocene and the characteristic forms of the loess [*cf. H. Breuil, p. 273 ff.*].

As early as the summer of 1928, Pei had come across skull fragments (a parietal bone and a fragment of a frontal bone, as well as many teeth). On December 2, 1929, following extensive excavations, Pei again discovered a cranial vault, part of the underside of which was also preserved (known as the "Locus E" skull, a site within "Locality 1"). Later that same year, a block of rock was excavated from which the second, well-preserved cranial vault was later uncovered (the "Locus D" skull). Its great significance lies in the fact that important parts of the underside, particularly the auditory region, are also preserved. Over the years, the finds from Chou-Kou-Tien have increased to such an extent that by 1940, remains of about 45 individuals were available. According to W. C. Pei[59] (1939), the dating would correspond to the Günz-Mindel interglacial period. In more recent studies, *Pithecanthropus pekinensis* is often placed in the Middle Pleistocene for good reasons (see Movius[60], 1944). These differences of opinion stem from the fact that, in one case, the local stratigraphic sequence is classified simply as Pleistocene, while in the other, from a broader regional perspective, it is classified in its entirety as Middle and Late Pleistocene. Compared to *Pithecanthropus erectus*, the forehead is somewhat steeper, the relative width of the facial region is smaller, and the average cranial capacity is larger (mean 1,075 cc). (Fig. 7 above, Plate I).

Even the earliest studies by Black[57] and Weidenreich clearly demonstrated that*"Sinanthropus pekinensis"*and *Pithecanthropus erectus* are very similar in their overall form. A comparison of the absolute dimensions and the outline of the calotte of*the "Sinanthropus" skull*from "Locus E" with that *of Pithecanthropus calotte* I reveals almost complete agreement. The different genus names are therefore not objectively justified; the name*"Sinanthropus"*is obsolete, and the correct designation is consequently: *Pithecanthropus pekinensis* (Boule[61], 1929, Kälin[62], 1945).

Also belonging to "Locality 1" is the site known as "Upper Cave," which contains the remains of another fossil human that clearly belongs to the *Homo sapiens group*. Its dating (Upper Pleistocene) is confirmed by the associated fauna *[see H. V. Vallois, p. 105]*.

Today it is almost universally recognized that, despite all its primitiveness and the significant deviations from the modern human form, *P. pekinensis* is a creature that unmistakably bears the hallmark of humanity.

For a long time, there was no reliable reference system for comparing the overall growth changes in human and ape skulls, such as the one established by Kälin[19] using the *clivus coordinates**. These are coordinates of the median plane, in which the abscissa is defined by the *clivus plane* and the ordinate by the perpendicular to the *clivus plane* at *the basion*. The point of intersection of these two coordinates is the origin of the system. Orientation according to the *clivus coordinates* cannot be replaced by alignment with the Frankfurt ear-eye plane, the plane of the greatest cranial cavity horizontal, etc., because all of these reference planes

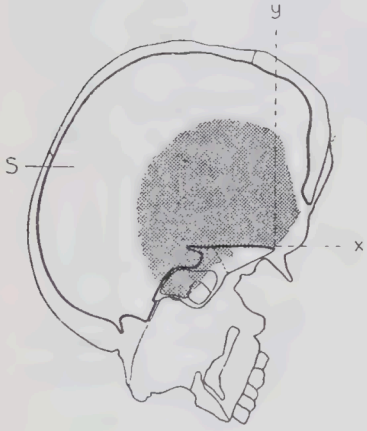


Fig. 8a

Human: combined representation of the median cross-sections of an adult skull and the cranial cavity of a newborn (shaded gray), oriented according to the *clivus coordinates*(x and y). S = adult cranial cavity. (Based on specimens from the Zoological Institute in Freiburg, Switzerland.)

Fig. 8b

Gorilla: combined representation of the median cross-sections of an adult skull and the cranial cavity of a juvenile (shaded gray), oriented according to the *clivus coordinates*(x and y). S = cranial cavity of the adult. (Based on specimens from the Musée d'Histoire Naturelle, Geneva.)

* By *"clivus"* we mean that part of the base of the skull located behind the depression known as *the fossa hypophyseos* (Turkish saddle).

may, on a case-by-case basis, occupy different positions within the common structural plan of the objects under comparison. In humans, the portion of the cranial cavity lying below the x-axis is still greatly expanded after birth, because the space occupied by the brain is powerfully expanded not only upward and forward but also downward as the brain grows, and the pronounced bend in the base of the newborn's skull is retained. In apes, by contrast, the aforementioned section of the brain either shrinks or remains roughly the same size, because the part of the skull base located in front of the *clivus* is elevated. Figs. 8a and 8b show, in longitudinal sections, the main differences in the growth of the cranial cavity between humans (*Homo sapiens*) and gorillas. Fig. 9 compares the sagittal curves (outlines in the midline) of a chimpanzee skull and various hominid skulls. It can be seen that in the latter, the cerebral portion extends further downward. In most Ice Age human forms, however, this is less pronounced than in *the Sapiens type*. The average capacity of the brain region appears to be smaller, and the facial skull is larger in lateral view compared to the brain region. Prognathism (forward protrusion of the face) is more pronounced when viewed in the ear-eye plane.

Distinctive features in *P. pekinensis* include the ridges, which appear as the*sagittal* ridge (*torus sagittalis*), as lateral ridges continuing from the supraorbital ridges, and as the occipital ridge (*torus occipitalis*). They are not comparable to the bony crests of the pongids; their functional significance likely lies in mechanical stabilization, particularly against masticatory pressure.

Fig. 9
Outer contours of the cranial vault in the sagittal plane from the nasion to the opisthion:
- .-..- Chimpanzee
——— *P. erectus*
..... *P. pekinensis*
- ---- *Homo sapiens*
— — *Homo neandertalensis*
- - - - *P. soloensis*

Lines 1–5 show (with the exception of *P. soloensis*) the course of the ear-eye plane. (Orientation based on *clivus* coordinates.)

Compared to*the "Sapiens" type*, the most striking features of the *Pithecanthropus group* are the small capacity of the cranial cavity and the relative size of the facial region around the eyes. These characteristics largely determine the overall shape of the skull. The height of the cranial vault appears much smaller relative to the total height. Also striking are the flatness of the forehead, the prominent supraorbital ridge, the massiveness of the jawbones (though the indentation below the eye socket characteristic of all modern human races is absent), the flat course of the temporal suture, the angle between the petrous pyramid and the axis of the ear canal, and the absence of a bony chin. The greatest width of the skull is in the region of the zygomatic arch. Consequently, when viewed from the rear, the lateral walls of the skull converge upward ("tent-shaped"), whereas in*the "Sapiens" type*they are more or less vertical ("house-shaped"). The cranial foramina indicate that in **Pithecanthropus pekinensis** and **Pithecanthropus erectus**, there was a depression in the temporal region near the brain, because the part of the cerebrum known as the *insula Reilii* (Reilii's islet) was still partially exposed. This condition is all the more significant in that it is generally observed as a temporary stage in embryonic development, but subsequently disappears in catarrhine apes—no less than in humans of *the Sapiens type* or the Neanderthal type—due to opercularization (expansion of the parietal and temporal lobes). The great thickness of the skull bones must also be noted here.

For a long time, the question of the intellectual capacity of *Pithecanthropus pekinensis* was the subject of lively debate. As early as 1931–32, Pei[63] reported the discovery of fire pits and stone tools. H. Breuil[64, 65] (1931, 1932) of the Institut de France confirmed the use of fire at several hearth sites and identified numerous stone tools as well as evidence of the artisanal working of bones in the deposits at Chou-Kou-Tien. However, since we still know of so many skull fragments and only a few other skeletal parts of **Pithecanthropus pekinensis**, many researchers, such as Weinert and Weidenreich, assume that this represents a form of cannibalism. According to this view, the sites would be a kind of prehistoric trash can in which the remains of consumed conspecifics were stored. W. Schmidt[66] (1941) rejects the assumption of cannibalism at Chou-Kou-Tien and emphasizes that among the most ethnologically ancient peoples—such as the Andamanese, Negritos, and Tasmanians—the skulls and lower jaws of the deceased are carried around for a long time and even given as gifts as an expression of reverence for the dead. Therefore, at every site—

camp, cum grano salis, one finds a situation similar to that at Chou-Kou-Tien: numerous skull bones, but rarely any other skeletal parts. Whether Schmidt's interpretation corresponds to reality, however, remains questionable.

Following Boule, it is still occasionally claimed that the remains of *Pithecanthropus*, like the numerous mammalian fossils, are the remnants of prey hunted by another, more advanced form of hominid. This form would also be much closer in appearance to the Sapiens type and would be the creator of the cultural artifacts from Chou-Kou-Tien. However, since no skull fragment has been found in the "Chou-Kou-Tien" area—despite extensive excavations—that could not be attributed to *Pithecanthropus*, this hypothesis is highly unlikely.

The dentition of *Pithecanthropus pekinensis* corresponds overall to the human type. (It is shown in Fig. 4, Plate I, together with the dentition of a modern human.) The teeth of Peking Man appear larger. In the incisor-like shape of the lower canine, *Pithecanthropus pekinensis* even appears "more human" than the type specimen of *Homo sapiens* (Fig. 10). It is also important to note that in *modern* humans, the first molar looks even more like a molar than its successor, the first premolar. This is particularly true of the frequent development of five cusps and the size of the talonid, which makes the first mild molar "much more similar to a permanent molar of the Eocene tarsioid *Omomys* than to Pd 3 of the chimpanzee" (Adloff[67], 1927). (The chimpanzee is the pongid whose dentition varies most toward the human type.)

Fig. 10

Teeth of Pithecanthropus pekinensis (Black), actual size;
J = upper incisor,
C = lower canine,
P_1 = lower first premolar,
M_2 = lower second molar,
b = buccal, **l** = lingual,
m = mesial, **d** = distal,
o = occlusal

(According to *Weidenreich*, 1937.)

The striking differences in*the "Sinanthropus" dentition*compared to modern humans, as noted by Weidenreich[68] (1937), concern either characteristics that are typical not only of primitive primates but also of other mammalian groups (the basal band, *cingulum*), or secondary specializations, namely those related to

part, the distinct “wrinkling” of the molars and taurodonty (widening of the root canals). The “wrinkling” exhibits a different pattern in the pongids.

Weidenreich[69] (1943) demonstrated that a number of more or less constant characteristics of *Pithecanthropus pekinensis* are particularly common in the modern Mongoloid race: “shovel-shaped” incisors, *torus sagittalis*, *torus mandibularis* (bony ridge on the inner side of the lower jaw), shape of the nasal bones, large profile angle of the nasal root, exostoses of the bony auditory canal, etc.—He therefore believes in closer connections between *Pithecanthropus pekinensis* and modern Mongoloids. However, if one considers not only these similarities but also the differences, it is more likely that these are merely cases of parallel evolution, which—given the presumed monophyletic origin of humanity, the commonality of the genetic material, the possibility of parallel gene mutations, and the general findings of paleontology—are to be expected.

By 1932, Oppenoorth[70] (1932) had excavated fragments of five skulls of a fossil human from the Upper Pleistocene at *Ngandong* (Java), which the discoverer described under the name *Homo soloensis*. Later, remains of six additional skulls and two tibiae were uncovered. The cranial calvaria are particularly notable for their great length (Skull V, at 221 mm, has the greatest absolute calvarial length of any fossil hominid known to date). Weidenreich found so many similarities with **Pithecanthropus pekinensis** that he no longer regards the Ngandong people as members of the Neanderthal group, but instead classifies them within the **Pithecanthropus** group. Their inclusion in this taxonomic group is justified by the low cranial height index, the orientation of the temporal pyramid, the occipital protuberance, the general shape of the cranial vault, the development of*the mastoid process*, the configuration of the joint region on the temporal bone, the flatness of the temporal suture, the thickness of the bones, etc. While von Oppenoorth reported capacities of 1,160, 1,316, and 1,190 ccm for three skulls, the average capacity of six skulls, according to Weidenreich’s new calculation (1943), is merely 1,100 ccm—a value that is only slightly higher than that of *Pithecanthropus pekinensis*, which is 1,075 ccm.

A particularly striking feature of the Ngandong finds is the structure of the skull base. In stark contrast to the general thickness of the skull wall is the thinness of the bone at the base of the pituitary fossa (*fossa hypophyseos*). And while the *clivus* reaches a considerable length in all other hominids, here it is very short and also significantly shorter than in the pongids. In contrast, the bend in the skull base is very slight; the extension of the cranial vault toward the back appears (when oriented according to the *clivus coordinates*) more pronounced than in any other hominid form known to date. In light of this situation, we must regard the Ngandong skulls as evidence of a peculiar, distinct form

of *the Pithecanthropus group*. The nomenclaturally correct designation is therefore *Pithecanthropus soloensis* (Oppenoorth 1932). Weidenreich's view that modern Australians evolved from *Pithecanthropus erectus* via *Pithecanthropus soloensis* has become entirely untenable in light of the aforementioned peculiarities of the skull base.

The important mandibular fragment (with the highly significant lower premolars and the symphysis region), which was excavated in 1941 from the Lower Pleistocene of *Sangiran* (Java), likely also belongs to *the Pithecanthropus group*. The unquestionably human morphological characteristics (shape of the premolars, outline of the symphysis, *spina mentalis*, position of *the foramen supraspinosum*, etc.), combined with the absolute dimensions, compel us to assume the existence of a truly giant form of humanity here: *Meganthropus palaeojavanicus* (Weidenreich[56, 71], 1945)* (Fig. 11, Plate I, and Fig. 13). Even larger was *Gigantopithecus blacki*, described by Koenigswald[74] (1935) based on three molars from the Early Pleistocene Yellow Deposits in the Hong Kong area (China). Weidenreich believed that we are dealing here with a species exceeding

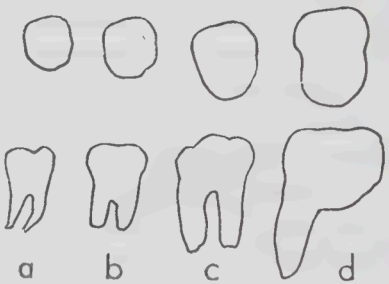


Fig. 12
Outline drawings of the third lower molar of a = Homo sapiens, b = Pithecanthropus pekinensis, c = Gorilla, d = Gigantopithecus blacki (lower row from the buccal side, upper row viewed from above).
(Based on illustrations by *Weidenreich*, 1946.)

3-meter-tall giant human (Fig. 12). However, its classification as a hominid is by no means certain; it may be a member of the Australopithecidae. But the fact that, as

* Another large mandibular fragment with an isolated molar (found on Java as early as 1939) was long regarded by von Koenigswald as a female fragment of *Meganthropus*. After Weidenreich rejected this interpretation and even questioned its hominid affiliation, the find was designated by von Koenigswald[72] (1950) as *Pithecanthropus dubius*. Finally, Weinert[73] (1951) described a maxillary fragment with two premolars from East Africa that "fits" remarkably well with *Meganthropus palaeojavanicus* and was therefore named *Meganthropus africanus*.

Weidenreich's view that, in hominid evolution, "gigantism is a primitive character which has the tendency to diminish as evolution advances" seems highly questionable in light of the general findings of phylogenetic research.

The hominid designated by Weinert as*"Africanthropus"*—*Pithecanthropus njarasensis* (Weinert)—is also likely closely related to *Pithecanthropus*. Its heavily fragmented skull fragments were discovered by Kohl-Larsen at Lake Njara in 1939. It therefore follows that the *Pithecanthropus group*[*presumably as the creators of the chopping-tool industries: cf. H. Breuil, p. 271*] was likely already present in areas as far apart as Java, China, and East Africa.

We may also count the famous lower jaw—unearthed as early as 1907 by high school teacher Schoetensack[75] (1908) in the Grafenrain sand quarry near Mauer, close to Heidelberg—among *the Pithecanthropus group*. According to the latest findings, its geological dating corresponds to the Mindel Glacial Period. Although there was no doubt about the purely human nature of the teeth, the Heidelberg mandible had long been attributed to an intermediate form between humans and "anthropoid" apes, primarily because of the bone's bulkiness, which was unique at the time. The dental arch is completely closed, and the canine does not protrude, or barely protrudes, beyond the dental arch. The teeth on the front left side, which were missing in older illustrations, were subsequently reconstructed by Weinert. The fracture lines at the root neck allowed for an accurate reconstruction of the entire dentition. The undoubtedly hominid nature of the mandible—despite its heaviness and the absence of a chin—would be unmistakable even without the teeth. In earlier illustrations, however, this was often obscured by an incorrect orientation in the depictions; for Schoetensack had, unfortunately, depicted the bone parallel to the longitudinal axis of the mandibular body instead of perpendicular to the plane of symmetry; as a result, the mandible appeared much longer than it actually is. The length of the tooth roots is particularly striking, especially in the incisors and canines: here, there is a convergence toward ape-like proportions. The shape of the dental arch, however, is distinctly human. The great width of the ascending ramus—6 cm compared to an average of 3.7 cm in modern humans—is very striking; yet such measurements still occur today as extreme variants (e.g., among the Inuit). Weinert has shown that the lower jaw fits well with the upper jaw of the Neanderthal from Rhodesia. All evidence suggests that we are dealing with a Europid representative of the *Pithecanthropus group*. The provisional name *Pithecanthropus heidelbergensis* is therefore justified.

In the discussion surrounding the Heidelberg mandible, the *chin region* plays a major role. Undoubtedly, the actual chin of the mandible is a relatively late development in human history. To clarify the morphological significance of this structure—which has led to many misunderstandings due to the ambiguity of the term "chin"—it is necessary to define what is meant by the bony chin, the *mentum osseum*. The decisive feature is undoubtedly the concavity of the mandible as seen from the side; the region that forms the lower part of this curve is the actual bony chin, regardless of whether it is a positive chin (which, when the upper edge of the alveolar portion [containing the tooth sockets] is in a horizontal position, protrudes beyond it) or a negative chin (in which the alveolar portion protrudes). What, however, particularly distinguishes human chin formation in a broader sense is the chin triangle, which is not known as such in any ape (not even in the embryonic state) and is associated with the curvature of the jaw halves toward the midline. This results in the formation of a gusset in which the two chin ossicles, *the ossicula mentalia*, appear. These become the triangular filling mass of the original gusset, the *trigonum mentale* (chin triangle), and thus, wherever a *mentum osseum* is present, an integral part of the latter. As Weidenreich[76] (1936) observed in juvenile lower jaws of **Pithecanthropus pekinensis**, the **trigonum mentale** is already present here; we find it again in the Heidelberg lower jaw.

For reasons of comparative anatomy, however, the outline of the longitudinal section in the chin region (longitudinal section in the plane of symmetry) is much more important than the chin itself

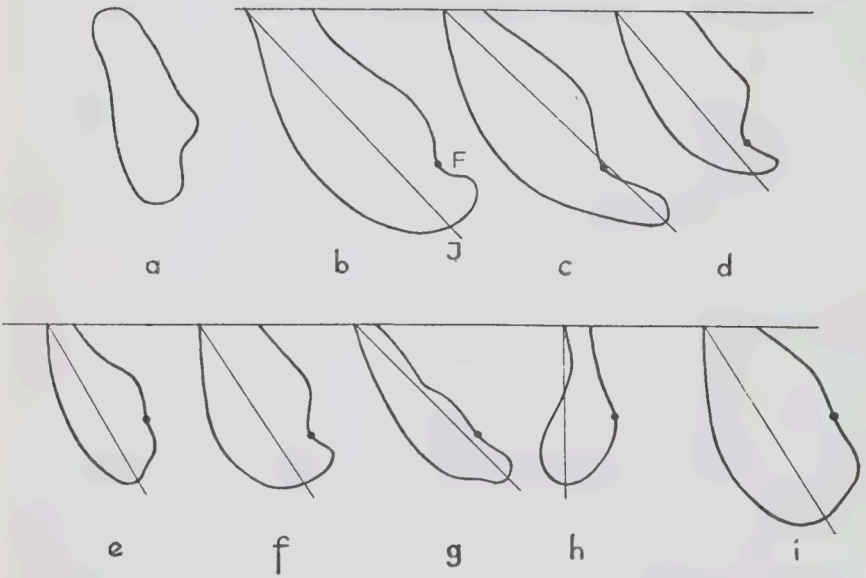


Fig. 13

Cross-section of the mandibular symphysis of a = *Proconsul africanus*, b = *Gorilla gorilla*, c = *Pongo pygmaeus* (orangutan), d = *Pan troglodytes* (chimpanzee), e = *Pithecanthropus heidelbergensis*, f = *Paranthropus robustus*, g = *Homo dawsoni* (Gregory's reconstruction), h = *Homo sapiens* ("Upper Cave" of Chou-Kou-Tien), i = *Meganthropus palaeojavanicus*. Labels: J = *Gnathion-incision line*, F = *Foramen supraspinosum*. (Combined from *Weidenreich*, 1945, and *Broom*, 1950.)

plane). It can be seen that in the pongids, the basal portion extends backward here to form a true basal plate ("simian shelf"), whereas in humans—with the exception of *Homo dawsoni* —this is not the case. Another significant difference lies in the position of *the foramen supraspinosum* (a canal for blood vessels) and, above all, in the inclination of the *nasion-gnathion line* relative to the alveolar plane (Fig. 13). An excellent summary of the discussions on the chin problem can be found in E. von Eickstedt's *Rassenkunde und Rassengeschichte*[77] (1942).

An overview of the most important "chin theories" yields the following: According to Albrecht[78] (1883), the chin is the result of the progressive reduction of the face and the "retraction" of the face beneath the cranial vault. Walkhoff[79] (1911) believed that, based on the arrangement of the bone trabeculae (trajectors) in the lower jaw, he could attribute chin formation to the pulling action of certain speech muscles and thus, ultimately, to cultural development arising from human social interaction. Walkhoff's theory has been refuted by Weidenreich and others. The images of trajectories could even be detected in X-ray images of plaster casts and shown to be merely an effect of thickness. Weidenreich[90] (1934) attempted to explain chin formation primarily through the reduction of the alveolar region as a result of the shortening of the dental arch, while Toldt[81] (1915) viewed the chin solely as the result of the formation of those small bones from which the relief within the *mentum osseum*—the *trigonum mentale*—arises in its various forms. More recently, Bolk[82] (1924) in particular has revisited the question of the chin. According to him, the chin forms as a concavity in the profile of the jaw due to a profound change in tooth replacement and tooth proliferation. In humans, tooth growth ceases after the eruption of the first molar, approximately between the ages of 6 and 12. During this period, the replacement of the portion of the permanent dentition located in front of the molars takes place. As a whole, this set of teeth does not require more space than the deciduous dentition, whereas the situation is entirely different in pongids. All elements of the permanent dentition are much larger here. According to Bolk, the skid-shaped profile of the lower jaw in pongids arises because the growth-promoting effects of tooth replacement and tooth proliferation combine in the alveolar portion. Thus, the alveolar portion must grow further forward, whereas in humans, due to the retardation of tooth replacement, the forward growth of the jaw remains limited to the basal portion. This results in a gradual advancement of the basal portion, i.e., the characteristic chin profile. And because the interplay of tooth replacement and tooth proliferation could also be demonstrated in the jaw of the Ehringsdorf Neanderthal child, this finding likewise seemed to support Bolk's view, according to which the absence of a chin in humans of *the Pithecanthropus group* and the Neanderthal group ultimately stems from the absence of retardation in tooth replacement. Despite the brilliance of Bolk's theory, however, it has its weaknesses, which Adloff[83] (1939), among others, had already pointed out. It has been completely refuted by the important finding of R. Bay[84] (manuscript), who was able to demonstrate, based on extensive material from Neolithic individuals, that despite the presence of a chin, no retardation occurred after the eruption of the first molar.

Thus, as Bay demonstrates in detail, it is becoming increasingly clear that, even with regard to chin formation, an interpretation based on one or a few hypothetical causal factors within the phylogenetic context cannot do justice to the complex and holistic nature of the phenomenon. Rather, "the chin must be understood as a direct consequence of the species-specific, phylogenetic overall transformation of the skull—and indeed the body—which manifests itself in the rotation of the force fields of the growth determinants, that is, on the one hand, in the more rapid retraction of the light alveolar arch, and on the other hand, in the new and independent outgrowth of trigonal cemented bones from the basal plate, which itself yields only slowly. In this process, there is room only for limited functional co-shaping and very slight muscular modeling" (Bay).

2. THE PALAEANTHROPI (NEANDERTHAL GROUP)

In 1856, skeletal remains were first identified in the Neander Valley near Düsseldorf as belonging to a fossil human type that inhabited a large part of Europe at least during the second half of the last interglacial period and later *[as the bearers of the Mousterian culture; cf. H. Breuil, p. 280]*. This is the classic discovery of the Neanderthal, *Homo neanderthalensis*, who, following Schwalbe and others, was regarded as a transitional link to modern humanity, reminiscent of the "anthropoid" apes, and was designated as the "primitive man." However, since an extensive body of Neanderthal material has since been examined from a vast number of sites, Neanderthals have long been regarded as a relatively late form of hominids.

It should be emphasized, however, that the Neanderthal morphological stage encompasses various racial characteristics and found its fullest expression in a form known primarily from Western Europe. This is the "high Neanderthal," *Homo neanderthalensis neanderthalensis*. The work of M. Boule[85] (1908) and others has provided us with a clear picture of the Neanderthal's physical build, at least for this "classical" type. In contrast to their relatively small stature, the strikingly large skull houses a brain whose volume was certainly higher on average than the average volumes of modern human races, and which, in the finest skull specimen—that of the old man from La Chapelle-aux-Saints—amounted to approximately 1,600 cc (Fig. 14, below, Plate I). The flatness of the forehead is compensated for by the striking "chignon"-like protrusion of the occiput. Also striking are the strong, bony brow ridges. The mastoid process is poorly developed. The suture between the temporal bone and the parietal bone (*sutura squamosoparietalis*) is low-lying and its course is only slightly curved. The face as a whole protrudes strongly in profile (pronounced total prognathism), and compared to modern humans, the bony chin is still absent, as is the depression beneath the eye sockets, the *fossa canina*. Neanderthals generally have long skulls (*dolichocranial*). When viewed in the Frankfurt horizontal plane, the occiput in the *Norma occipitalis* has an approximately transverse-oval outline; in the *Norma verticalis*, the pronounced constriction of the lateral margin behind the eye sockets is still reminiscent of the *Pithecanthropus type*. The list of sites now extends far beyond Europe. It ranges from Moravia through Germany, France, Belgium, Spain, Italy, Kiik-

Koba in Crimea, Palestine, and Uzbekistan, all the way to Rhodesia (Africa).

The skull from *Broken Hill*, Rhodesia, exhibits distinct racial characteristics. The *supraorbital torus* is relatively more pronounced than in all Western European Neanderthals, but is almost interrupted at the *glabella*. Its cross-section is angular. The skull appears strikingly narrow (*hyperdolichocranial*). The external auditory meatus lies below the base of the zygomatic arch (as in modern human races), and the zygomatic arches project strongly outward. The cranial capacity is 1280 cm^3. Various circumstances leave open the possibility that "Rhodesian Man" was still a contemporary of modern human races; a definitive dating has proven impossible.

For a long time, most anthropologists, following Weidenreich, believed they had to assume an orthogenetic evolution of the *Pithecanthropus group* through the Neanderthal stage to*the "Sapiens" type*; however, this view has now been severely undermined. Part of the reason for this situation is the growing recognition that the relatively early forms of those specimens we can group under the Neanderthal category—in contrast to the later forms (such as the "Old Man of La Chapelle-aux-Saints")—resemble features of *the *Sapiens* type* in some respects and are at the same time much less specialized. First and foremost in this context, we must highlight the important discovery made in 1933 by the Stuttgart paleontologist Berckhemer[86] (1937) near Steinheim an der Murr. The significance of this find lies in the fact that, with its peculiar mixture of Neanderthal and*"Sapiens"-like*features, it undoubtedly dates to a much earlier period than that of the late Neanderthal. According to Soergel[87] (1938), the find likely belongs to the Mindel-Riss Interglacial.

According to Zeuner[39] (1945), the most recent interglacial period is also a possibility.

The Steinheim specimen is distinctly dolichocephalic and very narrow; even the small skulls from Gibraltar I and Saccopastore appear less narrow. The cranial capacity is only 1,100 cm^3 (Fig. 15, Plate II). The rounding of the occiput in lateral view and the nearly isodiametric shape of the cranial vault when viewed from behind are characteristic of modern humans; the elliptical outline of the occiput, as found at La Chapelle-aux-Saints, is thus absent. The temporal suture is strongly arched, and the face is highly profiled due to the depression beneath the eye socket; thus, the pointed face characteristic of differentiated Neanderthals is absent. In contrast, the flatness of the forehead corresponds to that of the Neanderthals, and

above all the massive supraorbital ridge as well as the underdeveloped mastoid process.

Somewhat less striking, yet unmistakable, is the peculiar combination of *Homo sapiens-type* characteristics and Neanderthal features in the finds from the Levallois-Mousterian period on Mount *Carmel* (Palestine). The Mount Carmel specimens were excavated in 1931 and 1932 by Miss Garrod and MacCown. They come from the caves of Et Tabun and Mugharet es Skhul near Atlit. The finds from the Et Tabun cave consist of the skeleton of a young female, a male mandible, and a femur; the more extensive Skhul finds, on the other hand, include a child's skull and nine skeletons. As MacCown and A. Keith[88] (1939) demonstrated in an exhaustive description, these skeletons exhibit considerable morphological diversity. In the case of the woman from Et Tabun, Neanderthal characteristics are distinctly predominant, whereas, for example, Skeleton No. 5 from the Skhul Cave is unquestionably much closer in form to the modern human type. But there is a continuous transition between these two extremes, so that Keith and MacCown had to abandon their earlier distinction between two separate types. As with the Carmel finds, this intermediate morphological position is also evident in the five skeletons discovered by Neuville and Skékélis in 1934 and 1935 in the cave of Djebel Kafzeh near Nazareth. While Ashley-Montague interpreted the Carmel finds as the result of interbreeding between Neanderthals and *Homo sapiens* [*see A. Rust, p. 292*], Keith and MacCown reject this view.

Keith and MacCown viewed the Carmel finds as a transitional form leading to modern humans. Gieseler[90] (1935) noted that one could also view the matter from the opposite perspective: the intermediate position in terms of characteristics could be explained by the fact "that some of the Carmel skeletons are not yet so differentiated and are thus still relatively sapiens-like, while others are already more highly developed and have already taken on Neanderthal-like features." However, the geneticist Dobzhansky[89] (1944) has been able to show that, in light of the findings of genetics, the combinations of characteristics in the Carmel finds allow for hardly any interpretation other than that we are dealing here with a hybridization between representatives of the Neanderthal group (*Palaeanthropi*) and the *"sapiens" group* (*Neanthropi*). It follows from this that Neanderthal and *"sapiens" forms* belong to one and the same polytypic species in the sense of the genetic concept of species (see page 51). According to Weidenreich[69], the *Pithecanthropus forms* would also belong to the same species. Genus and

species names would then have only the significance of symbols for different racial groups and races within the hominids.

The Karmel finds and the documents from Djebel Kafzeh are most likely older than the "Chapelle type" and still fall within the Riss-Würm interglacial period.

It appears that the older, small-brained Neanderthal finds represent a state that, from a phylogenetic perspective, is to be regarded as primary, i.e., of lower evolutionary value compared to the "Chapelle type," and the possibility cannot be ruled out that both certain forms of*the "Sapiens" group*and the "classical" Neanderthal diverged in different directions from such early forms. Heberer[91] (1944) and Weinert referred to the "Steinheimer" as a "pre-Neanderthal," a term that, however, implies a specific judgment regarding phylogenetic relationships. It is probably more cautious to speak of a "*semi-Neanderthal*." For there is also the possibility that this is a form which, originating from a precursor of the Neanderthal, had already embarked on a different evolutionary path: the one leading to modern humans.

Sergi[93] (1939) rightly argued that the small-cerebellum Neanderthals from Gibraltar I and Saccopastore, in contrast to the specimens from Neanderthal, Chapelle-aux-Saints, Spy, etc., should be regarded as evidence of a distinct Mediterranean race. Sergi emphasizes that the Saccopastore specimen, when compared to another Neanderthal find from Italy—the Monte Circeo skull—combines greater typological distinctiveness with a clearly greater age. "Skull I" from Saccopastore lacks the indentation above the supraorbital ridge in the midline and the "chignon" at the occiput. The entire skull is strikingly delicate, and its capacity is only approximately 1,200 cc. However, the low *squamosoparietal suture*, the weak development of *the mastoid process*, and the prominent *postglenoid process* are distinctly Neanderthal in character. The bony nasal opening (*Apertura piriformis*) and the eye sockets are reminiscent in their dimensions of "Skull I" from Gibraltar. Admittedly, "Skull II" from Saccopastore deviates less from the "Chapelle type." However, the difference in cranial capacity is even greater; it is, in any case, less than 1,200 ccm. Weinert seeks to explain the differences between the small-cerebellum Mediterranean Neanderthal finds and the "Chapelle type" by sexual dimorphism. Yet the validity of such a theory seems highly questionable, not least because of the significant differences in cranial capacity: pre-Würm skulls averaged 1,200 ccm, while Würm-period skulls ranged from 1,500 to 1,700 ccm.

Heberer also criticizes Weinert's[94] (1944) idea that merely sexual differences account for the variations between earlier and later Neanderthal finds. Weinert's claim that the differences in skull shapes are caused by additive polygeny of hereditary factors is completely unfounded. For one thing, we know practically nothing yet about the inheritance of normal cranial morphological traits, and second, given the frequency of extreme variants, pleiotropy would be a much more likely explanation. Heberer also casts doubt on whether Weinert correctly reconstructed the midline of the "II" skull from Saccopastore and raises the question of whether

a closer resemblance to Gibraltar might be considered here as well. In any case, Saccopastore "II" also deviates significantly from the "Chapelle type" due to its very slight prognathism and the absence of a pronounced depression above the *torus supraorbitalis*. The fact that juvenile individuals of the Western European Neanderthal type, such as the youth from Le Moustier, fit into this category is quite understandable given the laws of individual development. But the question remained open for the time being as to whether the essential features of*the "Sapiens" group*were not much older; in any case, the Steinheim find already points to this possibility. And in this context, the latest research on the early forms of*the "Sapiens" group*takes on special significance.

3. THE EARLY FORMS OF NEANTHROPI ("SAPIENS" GROUP)

First and foremost, we must mention a human species whose remains are among the oldest found on European soil and which continues to be the subject of debate to this day. This is *Homo dawsoni* (*"Eoanthropus dawsoni"*) *from* Piltdown (Sussex) in southern England (Fig. 14 above, Plate I). The remains were discovered between 1911 and 1915 in a gravel deposit that formerly formed part of the riverbed of the Ouse. It had long been recognized that the associated fauna included Early Pleistocene and perhaps even older mammals, but also species whose age might be significantly younger. Even according to the first researcher, A. Smith-Woodward[95, 96] (1913, 1922), "Piltdown Man" should be assigned to the Early Pleistocene, while the long-preeminent American paleontologist H. F. Osborn even believed it was permissible to assume a Pliocene age. And since, according to the nearly unanimous opinion of English paleontologists and geologists familiar with the terrain, the Early Pleistocene age was established or at least highly probable, the scientific community largely remained "poing et pied lié" (Montandon) to this judgment.

The first remains of "Piltdown Man" were discovered by Dawson in 1911 and later designated "Piltdown I" (parts of the frontal bone, left parietal bone, left temporal bone, and occipital bone, as well as a fragment of the right mandible bearing two molars). Teilhard de Chardin found an isolated canine at the same site in 1913, and around the same time, the nasal bones and the turbinates (nasal conchae) were uncovered.

Dawson discovered the remains designated "Piltdown II" in 1915, approximately two miles from the first site (one fragment each of the frontal bone and occipital bone, as well as a lower molar). The frontal bone fragment raises the suspicion that it belongs to the same individual as the remains of "Piltdown I."

All the pieces of "Piltdown I" match in color, state of preservation, and, above all, in shape (among the striking similarities is the enormous thickness of the bones). The isolated molar matches perfectly with the teeth embedded in the lower jaw fragment. All of this seems to suggest that the specimens belong together. Nevertheless, for a long time—primarily because of the supposedly primitive nature of the lower jaw—the jaw fragment was attributed, particularly by German scholars, to a fossil ape closely related to the orangutan. But as early as 1916, Ramström[97] noted similarities between the lower jaw and that of a direct predecessor of modern human races, the Upper Paleolithic individual from Combe Capelle. It is therefore of the utmost importance that Weinert[98] (1933) subjected the entire material to a reexamination and, in doing so, was able to demonstrate with near certainty that all the fragments of "Piltdown Man" belong together.

Weinert's work shows that the lower jaw is much shorter than was previously believed; above all, it is too short to be ape-like. In assessing the lower jaw fragment, one must bear in mind that this bone is extraordinarily variable in its overall shape. This applies above all to the ascending ramus. What appears so peculiar about "Piltdown," however, is the pronounced protrusion of the lower marginal region in the midline toward the rear. Although this peculiarity is not as pronounced as one might assume from earlier depictions due to the incorrect orientation, there is no other human fossil that would appear so ape-like in this respect. The molars of the mandibular fragment, however, are typically human. This is evident not only from the relief of the occlusal surface but also from the divergence between the anterior and posterior crown surfaces when viewed from the side, as well as from the molars' significant projection above the level of the jawbone. In pongids, the molars are embedded much deeper.

Although the isolated *canine* is smaller relative to the molar sizes when compared to the pongids, by human standards this canine is strikingly large both in absolute terms and relative to the molars. The high, steep forehead and the absence of the supraorbital ridges—which are usually characteristic of older human forms—give it a particularly modern appearance. Human characteristics are also evident in the fact that the sutures on the outer surface are still discernible, whereas those on the inner surface have already closed; in other primates, the outer sutures are the first to disappear. Furthermore, the impressions of the*meningeal* arteries (*arteriae meningeae*) on the inner surface are characteristic of modern humans. The same applies to the shape of the glenoid cavity, the position of the external auditory meatus, etc. In contrast, the sharp bend in the longitudinal axis of the temporal bone (from the center of the lower edge of the external auditory meatus to the tip) falls completely outside the scope of modern human characteristics. The

slight overlap of the temporal bone lobe over the parietal bone. In its overall shape, however, the temporal bone corresponds to the human condition. According to Weinert, the skull's length-to-width index is 83–84; it is therefore brachycranial.

From a prehistoric perspective, the find was also of particular interest for a long time because, a short distance from the Piltown I fragments and in a slightly higher stratigraphic layer, a bone fragment was discovered that Smith-Woodward[96] (1922) had already regarded as a tool belonging to *"Eoanthropus."* H. Breuil was able to demonstrate, however, that it was likely gnawing marks made by a fossil beaver. Such a beaver has also been identified in the associated fauna of Piltdown.

The question of the age of "Piltdown" appears in a different light thanks to the work of K. P. Oakley and C. R. Hoskins[99] (1950). They were able to show that, under conditions such as those found at Piltdown, the relative age of fossils can be determined with a high degree of certainty by measuring the fluorine content, which increases over time. This is also evident from the results obtained using the same method, which indicate a 2% fluorine content in the geologically well-dated Swanscombe skull, whereas Upper Pleistocene finds from the same area contained only 1% and postglacial bones never more than 0.3% fluorine. The Galley-Hill skeleton, found in the same Middle Pleistocene gravel deposits, yielded only about 0.3% fluorine. For Piltdown, the following fluorine content percentages were obtained:

Homo dawsoni from "Piltdown I"
4 fragments of the cranial vault (left parieto-frontal) 0.1
left temporal 0.4
right parietal 0.3
occipital 0.2
mandibular fragment 0.2
Canine 0.1
1 molar 0.1
Homo dawsoni from "Piltdown II"
Right frontal bone 0.1
Occipital bone 0.1
Molar 0.4
Lower Pleistocene mammals
2 molars from Mastodon arvensis 1.9 and 2.3
3 molars from Elephas planifrons 2.5–3.1
Premolar from Rhinoceros cf. etruscus 2.0

All other elements of the associated fauna showed lower values and are either definitely (*Cervus elaphus*, *Castor fiber*) or likely of more recent origin. Geological considerations and the fact that the most recent mammal remains indicate a warmer climate, combined with a fluorine content in the human remains of approximately 0.1–0.4%, justify the conclusion that "Piltown Man" lived during the Riss-Würm interglacial period.

Curiously, a second find representing the archaic forms of the *Sapiens group* also comes from England. This is the *Swanscombe* skull, discovered by Marston in 1935–36. The

committee of anthropologists, paleontologists, archaeologists, and geologists convened by the Royal Anthropological Institute in London concluded in its "Report on the Swanscombe Skull"[100] in 1938 that the remains most likely date from a period corresponding to the second interglacial on the continent. The accompanying stone tools belong to the Middle Acheulean type *[see H. Breuil, p. 271]*. The associated fauna (mollusks and vertebrates) also corresponds to the Middle Pleistocene. The site is located at a depth of 8 m in the terrace gravel on the southern bank of the Thames between London and Gravesend. The material consists of a complete occipital bone and the complete left parietal bone. The thickness of the bones is less than that of "Piltdown," but greater than that of a modern human race. Apart from this point, the only characteristic that clearly differs from *Homo sapiens* is the great width of the occipital bone. The dimensions are remarkably similar to those of "Piltdown I." The length-to-width index is approximately 78. According to Morant[101] (1938), the cranial capacity is 1,325 ccm. The occasionally claimed similarity to the Steinheim skull was rejected by Keith[102] (1938–39), who points to the more pronounced protrusion of the occiput and other distinctive features. In terms of form, the Swanscombe Skull constitutes a "chaînon entre l'Hominidé de Piltdown et l'Homo sapiens d'aujourd'hui" (Montandon).

Finally, of the utmost importance in this context are the fragments of a cranial vault discovered by Miss G. Henri-Martin in the spring of 1949 at *Fontéchevade* (Charente, France). They were found at a depth of 2.60 m in a stratum with an unambiguous date and, designated "Fontéchevade II," comprise the majority of both parietal bones and the upper two-thirds of the frontal bone. The geological conditions rule out the possibility of a secondary deposit. The associated fauna indicates the warm climate of the last interglacial period (*Dicerorhinus mercki*, *Dama*, *Testudo graeca*, etc.). The archaeological findings also corroborate this: the accompanying artifacts are typical "Tayacian" [*cf. H. Breuil, p. 271*] of the Middle Paleolithic. We are dealing with the oldest, reliably dated human remains found on French soil. The great significance of the Fontéchevade skullcap lies in the fact that it is certainly older than the classic Neanderthal and yet, like Piltdown and Swanscombe, belongs to*the "Sapiens" type*.

The pentagonal outline and the general shape of the cranial vault in the *norma verticalis*, along with the absence of the *supraorbital torus* and the steepness of the forehead, leave no doubt as to its affiliation with*the "Sapiens" type*. In contrast, the

suture between the temporal and parietal bones is primitive in that the steep angle of the suture surfaces relative to the outer, free surface of the bones is very pronounced, even more so than in Piltdown I. The course of the suture also differs from that of modern human races due to its relative flatness and deep position. The orientation of the forehead was determined approximately by aligning the straight profile line between *the bregma* and *the vertex* in a horizontal plane and superimposing it on the skulls of various fossil hominids oriented in the same manner. This, in conjunction with the fortunately preserved small portion of the inner surface of the frontal sinus, revealed not only the general shape of the forehead but also the absence of *the supraorbital torus*. Again, as with Piltdown and Swanscombe, the *parietal foramina* are absent (in modern humans, according to Vallois, they are present in approximately two-thirds of cases).

The length of the skull is probably approximately 195 mm, and the width approximately 126 mm in the biasterion diameter (Vallois[103], 1949). The length-to-width index is therefore estimated at approximately 78.9; the Fontéchevade Man would thus be mesocranial. According to Vallois's calculations, the cranial capacity can be estimated at 1,415 to 1,470 ccm. At 7–9 mm, the bone thickness corresponds to that of the Swanscombe Skull and is surpassed only by "Piltdown."

The previously discovered fragment of a frontal bone, designated "Fontéchevade I," is no thicker than that of modern humans (4 mm thick, measured 2 cm from the midline above the *torus supraorbitalis*, compared to 8 mm at the same location in Piltdown I).

Perhaps the finds from Kanam and Kanjera (East Africa)—unearthed by Leakey but not reliably datable—also belong to the early forms of*the "Sapiens" group*. (The conference convened in Cambridge in 1933 by the Royal Anthropological Institute placed the skull fragments from Kanjera in the Mindel-Riss Interglacial period and the lower jaw from Kanam even in the Günz Glacial period; however, Boswell's[104] [1935] reexamination of the circumstances of the finds has raised legitimate doubts in this regard.)

The *"sapiens-like"* finds from Denise (cf. Depéret[105] 1926), Castenodolo (1800), Olmo (1863), Galley Hill (1888), and Ipswich (1914) have also been presented as early forms; yet in all these cases, no age extending beyond the Würm Glacial Period has been demonstrated.

Heberer[91], referring to Gibraltar I, Saccopastore I, Krapina, and Ehringsdorf, sought to "regard the pre-glacial Neanderthals as still capable of further development and to see in them representatives of the ancestral lineage of both the sapiens type and the classical Neanderthal." But since the Swanscombe Man is much older than the interglacial early Neanderthals and the "Piltdown Man" and the Fontéchevade Man lived at roughly the same time as them, it is much more likely that the Upper Paleolithic *Homo sapiens* —who already appear quite modern—descended from a root race to which the Swanscombe specimen perhaps belongs. In this regard, at least in Piltdown, the final form of an evolutionary line seems to be present,

which, due to the unique combination of modern and archaic features—particularly in the lower jaw—cannot be considered a phylogenetic descendant of more recent hominids.

The question of the early forms of *the "Sapiens" group* (the so-called "pre-Sapiens problem" as defined by Heberer[52] [1950]) has been discussed on several occasions in recent years. The interesting occipital bone from Quinzano (northern Italy), described by Battaglia (1948), also contributed to this discussion. It exhibits distinctly archaic "Sapiens" *traits* (high values for the biasterion width and bone thickness). This, and above all the circumstances of the discovery, justify—as Heberer (1950) also emphasized—the conclusion reached by Italian researchers that we are dealing with a find that, with a high degree of probability, belongs to the Middle Pleistocene. In light of new findings in "pre-Sapiens research," Heberer now rejects his 1944 view—namely, that recent *"Sapiens" forms* had evolved from the oldest representatives of the Neanderthal group—as no longer consistent with the current state of research.

For a long time, scholars sought to discern the expression of a linear, continuous evolution within the groups of *Archaeanthropi*, *Palaeanthropi,* and *Neanthropi*. According to this view, the *Homo sapiens* racial lineage would have descended from the "Chapelle type" of Neanderthal, just as the latter would have evolved from the *Pithecanthropus group*. The difficulty arising from a phylogenetic derivation of the modern human type from the Western European-type "full" Neanderthal—with regard to the chronological classification of the fossil record—was supposedly bridged by Weidenreich, Weinert, Montandon, and others through the assumption of simultaneous evolution along multiple parallel lines with varying evolutionary rates from a single ancestral lineage (polycentric but monophyletic evolution). Racial differentiation within the Neanderthal and *Pithecanthropus groups* was also cited in support of this view. Thus, Weidenreich pointed out corresponding distinctive characteristics in *P. pekinensis* and the present-day Mongoloid race (see p. 73) and interpreted these, as well as certain similarities between the skull finds from Wadjak* (Java) and Keilor* (Australia) and modern Australians, as evidence of a genetic connection. According to Weidenreich, even certain similarities between the highly unusual "Neanderthal" from Broken Hill and the Upper Paleolithic individual from Boscop (North Africa) and modern Africans are said to

* The age of these finds is disputed.

suggest closer phylogenetic relationships. In view of the possibility of parallel genetic mutations, all these interpretations remain highly questionable; in any case, as Le Gros Clark[106] (1947) emphasizes, the Broken Hill find must be regarded as evidence of a distinct racial differentiation, from which a transition to any modern human form is unlikely.

Various circumstances argue against an evolution of the Chapelle type toward the "Sapiens" stage of humanity: morphological characteristics of the femur (width, curvature), the shape and length of the skull, etc. A point that has received little attention to date also points in the same direction: the shape and orientation of the spinous processes on the cervical vertebrae of the man from La Chapelle-aux-Saints. Namely, the spinous processes are not (as is occasionally claimed) strictly dorsal, as in the pongids

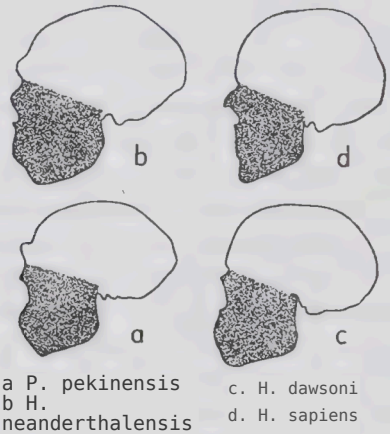


Fig. 16
Surface area of the facial region (dark) *and cerebral region* (light) *of various hominids in lateral view*
(After *Kälin*, 1946)

(backward). As in modern humans, the base of the processes is strongly inclined caudally; only the distal portion is curved cranially (toward the head). This curvature, which is absent in pongids, seems to indicate that it is a secondary transformation that occurred only during postnatal life due to the configuration of the neck musculature. A comparison of the sagittal profiles as well as the proportions of the brain and facial regions also reveals that doubts regarding the direct genetic relationship between *Pithecanthropus*, Neanderthals, and modern humans are justified. Fig. 16 shows that, compared to *Pithecanthropus*, the Neanderthal's cranial capacity has indeed increased to exceed the mean value for modern humans, without

there is, however, a reduction in the facial region so characteristic of the latter and of "Upper Paleolithic" humans. It therefore appears that we are dealing here with different evolutionary trajectories: in one, leading to *"Homo sapiens,"* the increase in cranial capacity was accompanied by a compensatory reduction of the facial region, whereas in the trajectory leading to Neanderthals, this reduction did not occur.

In recent years, some researchers—ethnologists interested in the problem of human origins—have been led by the ancient forms of *the "Sapiens" type* to regard it, at the very least, as the probable archetype of humanity. But such a conclusion is no less arbitrary than the approach of Weidenreich, who seeks to place giant forms such as *Meganthropus* at the very dawn of humanity. That view would be justified only if the paleontological evidence indicated that the *"sapiens" type* should be regarded as the absolute oldest among all human forms. Above all, however, it must not be forgotten that a correspondence between the chronological sequence—determined by the age of the finds—and the sequence of the corresponding evolutionary stages within human history cannot be expected in advance. This follows from the findings of genetics, particularly population genetics, as well as from phylogenetic studies of suitable zoological material. It is evident, in fact, that the probability of fossil preservation depends on a wide variety of fluctuating factors, with the rate of reproduction playing a major role. This alone can lead to inversions in the sequence of finds relative to the phylogenetic relationship of the forms in question. The frequency of such inversions, however, is greatly increased by divergent and parallel lines of evolution with varying rates of transformation.

As early as the Middle Pleistocene, humanity was divided into morphological groups, which can be assumed to have been largely isolated from one another not only biologically but also socially. It appears that these main groups split very early on into different races—some of which were morphologically intermediate between them—which developed as subgroups along more or less parallel evolutionary lines over long periods of time. It must also be assumed that within these racial groups, which exhibited more or less parallel evolutionary tendencies, the pace of phylogenetic development was uneven both overall and with respect to individual categories of characteristics, and that in one group this particular feature of the common ancestral form was preserved, while in another, that particular feature was retained. This **view** is supported not only by the diversity of the already

from the Early and Middle Pleistocene, but it is also to be expected on the basis of general laws governing biological development. However, these circumstances make it very difficult in some cases to identify the phylogenetically primary characteristics.

The sequence of forms—from *Pithecanthropus* through Neanderthals to *Homo sapiens* —shows us a progressive convergence toward the image of modern human races. For this reason, and because the "heyday" periods of the aforementioned types (with their concentration of finds) seem to follow one another in the same sequence, there is a recurring temptation to present the form of *the* oldest *Pithecanthropus species* in our find lists (*Pithecanthropus robustus!*) as the typical image of the actual "primitive man." But we must not forget here that the specimens of *the Pithecanthropus group*, too, differ to varying degrees from the common ancestral form of humanity. Certain features, through which these forms in some cases resemble specific characteristics of the so-called "anthropoid apes" (pongids) to such a high degree, are therefore, in part and to a certain extent, the result of secondary specialization. The similarity between the skull structure of early humans and that of the pongids was considerably less than has generally been assumed to date. This view is supported not least by the findings that have come to light in recent years from South Africa. The significance of this primate group for the problem of human evolution will be discussed below.

As has been shown, the holistic appearance of humans exhibits an unspecialized, youthful quality that represents the anatomical correlate of their open-to-the-environment behavior. These are morphological characteristics that were certainly already present in their fundamental form in the first humans, but which, in part, only gradually achieved full realization through evolutionary development. Cultural factors play a major indirect role in *human* evolution. These are factors that influence the effects of the "general" evolutionary factors (mutation, selection, isolation, and population waves).

Within the hominids, certain general evolutionary trends can be traced. These primarily concern the progression of cerebralization, as well as the increasing adaptation of the skull to a spherical shape and the retraction of the face. In the Neanderthal lineage leading to the "Chapelle type," the increase in brain mass—and thus in cranial volume—occurs first, whereas in the lineage leading to*the "Sapiens" type*, the retraction of the facial region occurs first. A comparison of skulls that are consistently oriented according to *clivus coordinates* reveals that, due to

the more pronounced bend in the portion of the skull base located in front of the *clivus*, not only the brain and thus the cranial cavity, but also the forehead in*the "Sapiens" type*extends significantly further downward than in the Neanderthal group or even in the *Pithecanthropus forms*. The immediate cause of this situation lies in the fact that the embryonic bend of the skull base is essentially retained in modern humans, whereas in the oldest human forms it was probably equally developed embryonically but was subsequently reduced during post-embryonic development in correlation with the more pronounced formation of the face. The general evolutionary trend of the human brain thus led to increasing brachycephaly, i.e., the skull became relatively wider, shorter, and taller. This was accompanied by a shift upward in the point of maximum cranial width, the straightening of the forehead, and a change in the shape of the cranial vault. Viewed from above, the skull became shorter; when viewed from the side and from behind, the dorsal region widened. This by no means rules out the possibility that, particularly with regard to the *Pithecanthropus forms*, certain divergent evolutionary lines underwent an ever-increasing secondary convergence toward certain characteristics typical of pongid apes. Let us, however, be careful not to draw hasty conclusions from observations of general evolutionary trends.

As the great individual variability in brain weights and brain volumes among modern humans has already shown us, a merely quantitative comparison cannot do justice to the complex nature of this organ. Mass alone, to a large extent, is no more an unambiguous expression of functional significance than the surface relief. Weidenreich[107] quite rightly pointed out as late as 1948 that we possess no evidence that would justify the assumption of a general increase in intelligence: "We do not know of any fact which proves that the mere increase of the size of the brain is tantamount to an advance in mental ability. Is modern man really more intelligent than Peking Man or Java Man or any great ape simply because his brain is larger?" Nothing, therefore, justifies the view held by Boule and others that, because of the small size of its brain, the cultural artifacts from Chou-Kou-Tien should be attributed to a more advanced human form than *Pithecanthropus pekinensis*.

The fossil record of human evolutionary history has revealed an ever-widening gap between humans and the pongids—that is, those apes that, in terms of physical form, are closest to humans among the modern fauna, namely the trio of chimpanzees, gorillas, and orangutans. In contrast, since 1946 we have gained a more precise understanding of the findings from South Africa, which have ushered in a new phase in research on human evolutionary history. This refers to the *Australopithecus group*. The most important fossils to date have been discovered since 1938. We owe them primarily to R. Broom, who died in 1951, and his colleagues[108, 109] (1946, 1950). Since the end of the war, these researchers have contributed to the scientific

world with highly interesting new discoveries year after year. An excellent summary of the most important findings regarding the Australopithecines can be found in Le Gros Clark[110] ["New Paleontological Evidence Bearing on the Evolution of the Hominoidea" (Quart. Journal of the Geol. Soc. London, March 1950)].

The material comes from bone breccias in the Transvaal and Bechuanaland. Precise dating cannot yet be carried out with certainty; however, the material appears to date, at least in part, to the Early Pleistocene; it likely includes some Upper Pliocene specimens. To date, five forms have been distinguished. As early as 1924, Dart had found a child's skull of *Australopithecus africanus* near Taungs (approx. 130 km northwest of Kimberley). Three species originate from Central Transvaal. An extensive collection of *Plesianthropus transvaalensis* has been excavated in the Sterkfontein area (nw of Johannesburg, approx. 15 km n of Krugersdorp); *Paranthropus robustus* comes from Kromdraai (about 3 km east of Sterkfontein), and a giant form, *Paranthropus crassidens*, originates from the Swartkrans site near Sterkfontein. No less significant are the remains of *Australopithecus prometheus* found since 1947 in the Makapansgat area (approx. 16 km northwest of Potgietersrust). The associated fauna of this species includes long long bones from ungulates, which, due to the peculiar chips at the joints, give the impression that they were used as striking weapons, and, strikingly, the numerous baboon skulls in the associated fauna of the australopithecines show indentations and openings whose size and shape are entirely consistent with what would be expected from the aforementioned use of the ungulate bones. Dart[11] (1949), in a study in which he received valuable assistance from Mackintosh, the head of the Department of Forensic Medicine at the University of the Witwatersrand, was able to demonstrate that approximately 80% of the baboon skulls show signs of violence that can provisionally be attributed only to deliberate, individual blows. A chemical analysis of the breccia material revealed the presence of coal-like particles, which are likely the result of exposure to fire. However, it has not yet been proven that *Australopithecus prometheus* knew how to use fire. And whether this Australopithecus was truly a human—that is, a being whose way of life was determined by a self-reflective mental principle—seems highly questionable. This remains true even if, as appears to be the case, he used the bones of prey animals and perhaps also stones as striking weapons. For the instrumental use of objects in pursuit of a situational—

does not go beyond what the mental life of animals—even invertebrates—is capable of achieving.

The australopithecines exhibit a peculiar combination of human morphological characteristics with typical features of higher Old World primates (of which the pongids represent only a specialized branch). Certain similarities to the proportions characteristic of the pongid type pertain above all to those aspects that, from an evolutionary perspective, are related to the ratio of brain size to facial size (Fig. 17, Plate III, and Fig. 20, Plate II). Furthermore, the australopithecines exhibit, to a high degree, proportions that were previously considered characteristic of hominids alone: the configuration of the joint region for the mandible (with involvement of the *pars tympanica* in the glenoid fossa), the deep position of the external auditory meatus relative to the zygomatic arch, the high position of the latter relative to *the orbit*, the overlying of the orbit by the brain, the positional relationship of *the nasion* and the frontal sinus to the anterior cerebral pole (Fig. 18), the strongly segmented cranial cavity with the posterior margins extending to the lesser pterygoid process of the sphenoid bone, the absence of the *postglenoid process*, and the overall configuration of the occipital region with the deep position of *the inion* (a point that approximately marks the

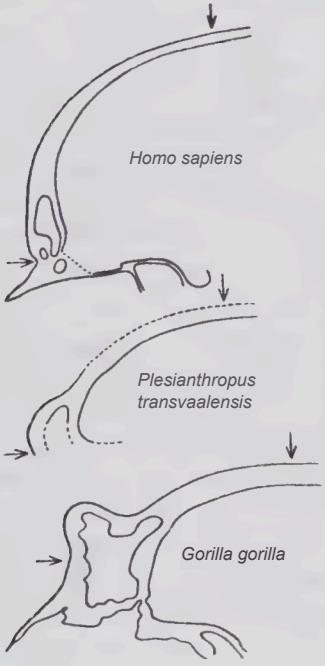


Fig. 18
Median section through corresponding parts of the skulls of Homo sapiens, Plesianthropus transvaalensis, and Gorilla gorilla. The horizontal arrow indicates the location of the nasion (the highest point between the nasal bones); the vertical arrow corresponds to the bregma. (After *Le Gros Clark*, 1947.) It can be seen that, while in the pongids the nasion lies high above the level of the cranial cavity, in the australopithecines, as in humans, the height of the nasion corresponds approximately to the anterior part of the cranial cavity.

upper limit of the neck musculature) and *opisthocranion* (posterior cranial pole when aligned with the "Frankfurt horizontal plane" [Fig. 19]), the high supraorbital height index, the structure of the ge-

4. *Chimpanzee*
2. *P. pekinensis*
3. *Australopithecus*

Fig. 19
Schematic longitudinal section through the occipital bone of a chimpanzee, Pithecanthropus pekinensis, and Australopithecus prometheus. Labels: J = inion, O = opisthocranion. (Modified from *Dart*, 1948.)

bite, the delayed closure of the sutures from the inside out, the delayed tooth replacement in *Australopithecus prometheus*, etc. The dentition of the Australopithecines most clearly reflects the human type in the

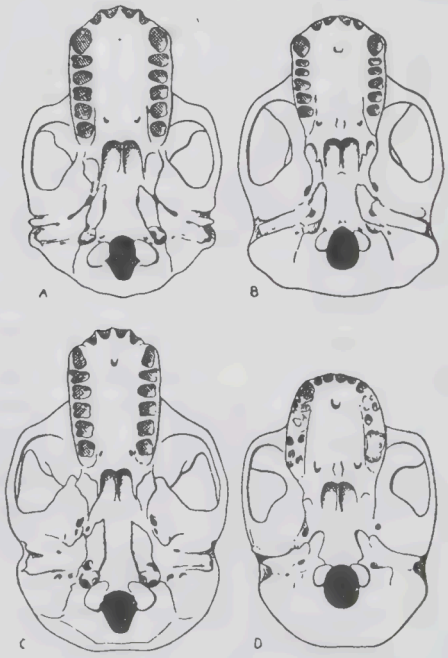


Fig. 21
Skulls of A = orangutan, B = chimpanzee, C = gorilla, and D = Plesianthropus transvaalensis (skull No. 5) as viewed from below (after *Le Gros Clark*, 1950.) Note in D the "horseshoe shape" of the dental arch, the small size of the canines, the absence of diastemata, the position of the foramen magnum, and the course of the zygomatic arch.

homomorphic canine group, in the absence of gaps between the teeth, in the molar-like nature of the first lower premolar in both the deciduous and permanent dentition, and to a large extent also in the shape of the dental arch (Fig. 21). The relief of the molars is also much closer to that of hominids than to that of pongids. In *Paranthropus robustus*, the convergence of the important first lower premolar toward the molars is downright "ultrahominid" (Fig. 22, Plate III). This also applies in part to the profile of the zygomatic arch. The shape of the mandibular symphysis is highly reminiscent of the *Pithecanthropus group*(Fig. 23, Plate III).

As early as 1948, the sensational first discovery of *Paranthropus crassidens* was unearthed at Swartkrans. The dimensions of the jaw and teeth here are roughly equivalent to those of *Meganthropus*. Finally, a skull—probably male—of this new giant form was also found, from which Broom calculated a brain capacity of 850 ccm. It thus appears that *Paranthropus crassidens* possesses a brain volume that is already on the order of magnitude of the most primitive representatives of *Pithecanthropus*. However, it must be emphasized here that even the species-typical absolute brain volume is not a measure of the "degree of cerebralization," because, according to Haller's law, it is generally determined in part by absolute body weight. The "total brain index" can serve as an approximate expression of the degree of cerebralization; however, to determine it, one would need to know the weight of the brain parenchyma. For this reason, and because *Paranthropus crassidens* is evidently a giant form, it is quite possible that its degree of cerebralization corresponds to the typical proportions of the australopithecines and has not yet reached the level of the hominids. Today, the record of *Paranthropus crassidens* already includes more than ten individuals. Reasonable estimates of the average brain volume for *Paranthropus robustus* and *Plesianthropus transvaalensis* combined amount to approximately 500 to 650 ccm in adulthood. The occipital bone of *Australopithecus prometheus*, discovered in 1949, appears particularly human-like. Consistent with the modern type of *Neanthropi* are the deep position of *the opisthocranion*, the even deeper position of *the inion*, the enormous size of the squamous part, the flat orientation of the nuchal plate, and the separation of the parietal bones. The position of the foramen magnum already seems to indicate a more or less upright posture. Of particular importance in this context is the configuration of the pelvic girdle. A hip bone of *Plesianthropus* found in 1947 exhibits predominantly hominid traits, despite certain deviations. Above all, however, this applies to

for a corresponding specimen of *Australopithecus prometheus* from 1948 (Dart[112], 1949). This evidence, together with the position of the occipital condyles in *Plesianthropus* and *Paranthropus*, justifies the assumption that the Australopithecines were, at least in part, capable of a bipedal posture while walking and standing that essentially corresponded to human proportions (Fig. 24 and Fig. 25). However, as Broom[109] (1950), Le Gros Clark[110] (1950), and Heberer[38] (1951) emphasize, it is becoming increasingly clear that in the Australopithecines—

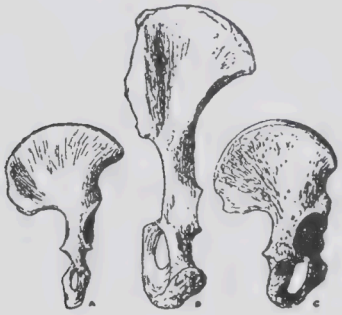


Fig. 24
Right hip bone of A. Plesianthropus transvaalensis, B. chimpanzee, C. human (Bushman). (After R. Broom and J. T. Robinson, 1950.)

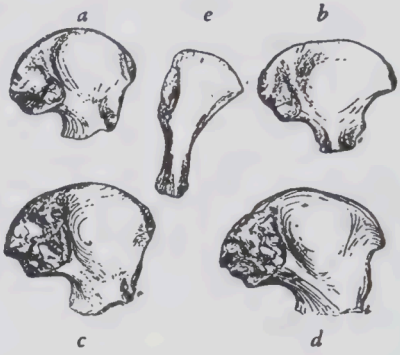


Fig. 25
Ilium (Os ilium) from a = Bushman (male), *b = Australopithecus prometheus*, *c = Bantu*, *d = Bushman* (female), *e = chimpanzee.*
(After *Dart.*)

We are dealing with a group of pithecids in which the boundaries between human and prehuman forms are largely blurred.

What is unexpected in this new phylogenetic perspective on human evolution is therefore not that the impossibility of a material causal link between humans and the primate group most similar to them in *today's* fauna has become evident. Rather, what is sensational is that the image of humans in the biologist's field of vision appears increasingly human, and that the expression of their physical autonomy was to a large extent foreshadowed in the animal-like precursors of higher primates. The brutal, animal-like primitive human, as he lived in Ernst Haeckel's imagination, has today been replaced by an image of humanity whose countenance has exuded the breath of the spirit from the very beginning (Fig. 27a and b, Plate IV).

The fact that characteristic features of hominids, which were formerly

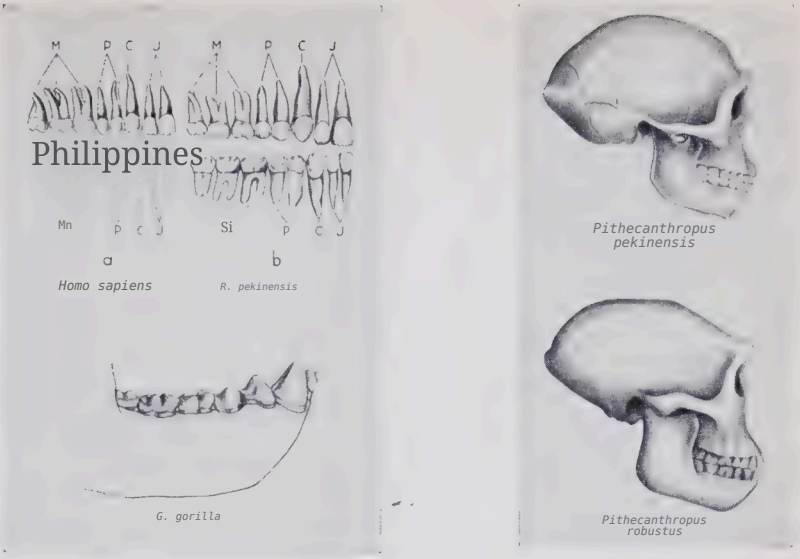


Fig. 4 *Dentition of Homo sapiens (a) and Pithecanthropus pekinensis (b) (after Weidenreich [1937]), as well as the lower jaw of Gorilla gorilla* (Musée d'Histoire Naturelle, Geneva). Fig. 7 *Reconstruction of the female skull of Pithecanthropus pekinensis and the skull of Pithecanthropus robustus* (after Weidenreich 1940 and 1945).

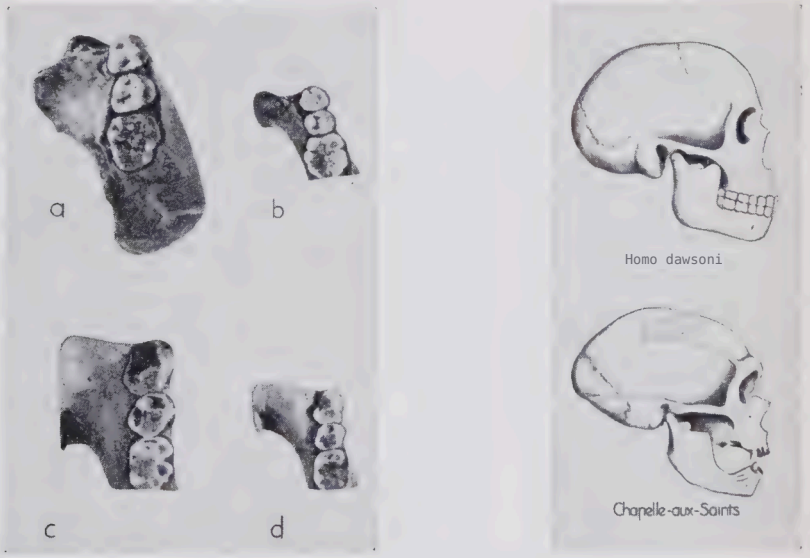


Fig. 11 *Mandibular fragment of Meganthropus palaeojavanicus (a) compared to corresponding jaw fragments of Homo sapiens (b), gorilla (c), and chimpanzee (d), according to Weidenreich* (1946). Fig. 14 *Skulls from La Chapelle-aux-Saints and the "Pildown Man" (Homo dawsoni, reconstruction).* After *Weinert* 1930 and 1933.

Fig. 15 *The Steinheim skull* (after Weinert 1936)

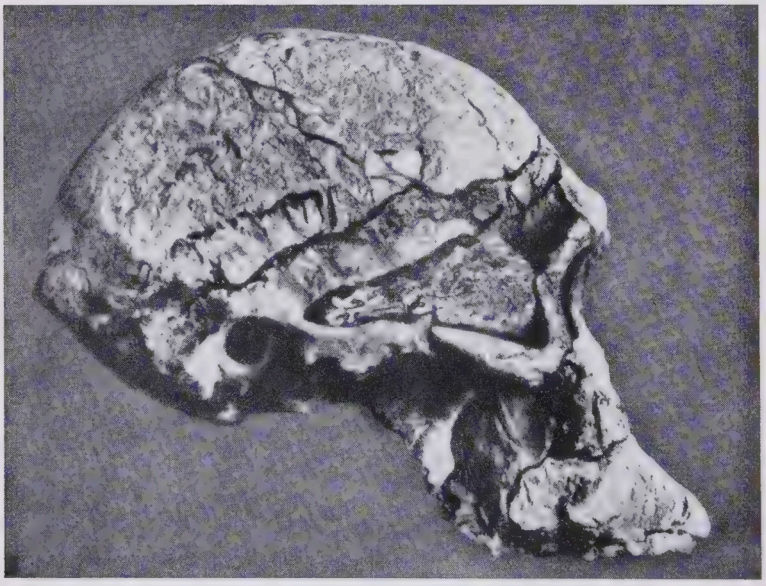


Fig. 20 *Plesianthropus transvaalensis* (skull no. 5), according to Broom (1950)

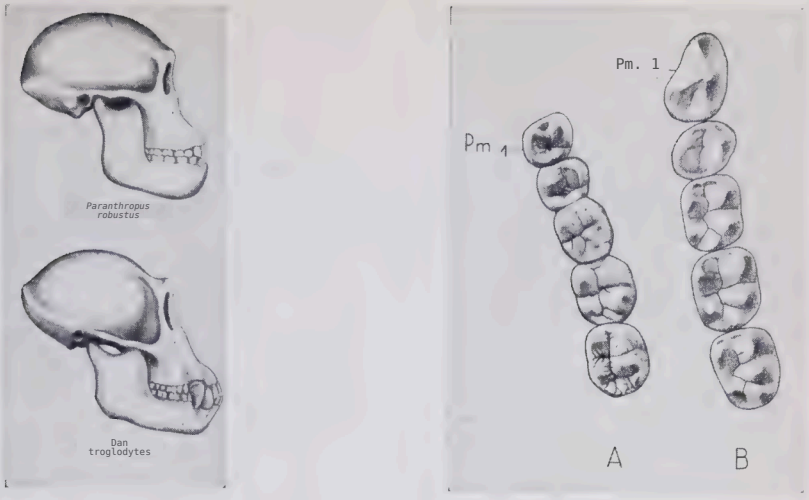


Fig. 17 *Reconstruction of the skull of Paranthropus robustus and the skull of the chimpanzee (Pan troglodytes) according to Le Gros Clark (1949). Fig. 22 Lower premolars and molars of the permanent dentition of Paranthropus robustus ([A], based on a plaster cast provided by Broom) and of Gorilla gorilla ([B], based on a specimen from the Musée d'Histoire Naturelle, Geneva).*

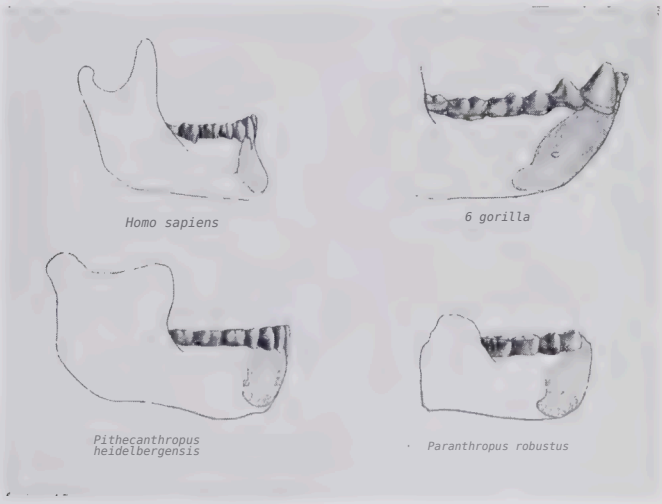


Fig. 23 *Lower jaws of Homo sapiens and Pithecanthropus heidelbergensis, as well as the main portion of the lower jaws of Gorilla gorilla and Paranthropus robustus. The cross-section of the symphysis is indicated by a gray shading.* Note the hominid character of the dentition in *Pithecanthropus* and *Paranthropus*, and in the latter, the strong convergence of the symphysis cross-section toward the hominid characteristics of the *Pithecanthropus group*. (Steep angle of the symphysis and absence of the "basal plate" that protrudes backward, as seen in pongids.)

Period and in the context of modern anthropology.

a. Reconstruction of the hypothetical “ape-man” (oil painting by *G. Max) from E. Haeckel*, *Natural History of Creation*. W. *de Gruyter* & Cie. Berlin and Leipzig (1920), 12th edition. b. Reconstruction of the head of *Pithecanthropus pekinensis* (female) based on *Weidenreich*, from *Birket-Smith:* *Wir Menschen*, Orell Füssli 1944, Zurich. Although this is not the “primitive human,” we may assume that the latter displayed no less of the human expression.

Figs. 27a and b *The attempt at reconstruction as an expression of the image of humanity within the monistic tendency of Haeckel’s*

which he believed to be limited to these, are prefigured to such a great extent in pre-hominid precursors is a further indication of the early separation of the pre-hominid morphological type from the Catarhinae lineage. This conclusion is underscored by the findings of the British-Kenya Miocene Expedition from the Lower Miocene of East Africa (see page 57), in which the striking features of *the* later *Pongoidea* are still partially absent, while the skulls and extremities show unmistakable echoes of the *Cercopithecoidea* and the *Hominoidea*. This situation justifies the assumption that the evolutionary lines of the *Pongoidea* and the *Hominoidea* had already diverged from a common ancestral lineage by the Pliocene.

The typological relationships within the Catarrhines and the evolutionary interpretation of these relationships are shown schematically in Fig. 26 as a projection into the present. Near the type circle of the

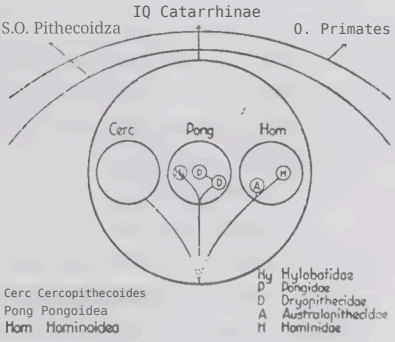


Fig. 26
Schematic representation of the most important typological designations within the type circle of the Catarrhines. The connecting lines express our evolutionary interpretation.

The reference lines for the Catarrhines are dotted. This is intended to indicate that the question remains open as to whether the root group of the *Hominoidea* and the *Pongoidea* within the Protocatarrhines was already separate from that of the *Cercopithecoida*. However, we must not forget that phylogenetic reconstructions are always interpretations that depend at any given time on the state of various fields of research and their evaluation. In this sense, we may assume that our evolutionary interpretations represent an approximation to the reality of genetic relationships that progresses alongside scientific advancement.

The new perspective on human evolutionary history reveals the following in particular:

1. Characteristic human morphological traits are largely foreshadowed in the pre-hominid stages of the australopithecines.

2. These findings, as well as comparative anatomical evidence from recent material, suggest the early divergence of *the Pongoidea* and the *Hominoidea* from a common ancestral lineage.
3. Within the hominids, there is evidence of significant morphological radiation with the coexistence of *Archaeanthropi*, *Palaeanthropi,* and *Neanthropi* during the Upper and Middle Pleistocene.
4. The population from Mount Carmel seems to suggest that at least the *Palaeanthropi* and the *Neanthropi* belong to one and the same species in the genetic sense of the term. This would mitigate the contrast between the older conception of "orthogenetic" evolution and the picture of speciation. If, as Weidenreich[69] (1943) assumes, the *Archaeanthropi* also belong to the same species, then within the hominids, genus and species names have only the significance of symbols for racial groups and races.

Undoubtedly, humans form a group of higher catarrhines within the primates. But the claim that humans are *nothing more than* a primate or *nothing more than* a higher catarrhine does not correspond to any scientific insight, but rather to a subjective bias. It springs from an intellectual framework characterized by adherence to a monistic interpretation of the world. But attempting to refute the spiritual essence of human beings and their autonomy using biological methods is based on the same methodological error as the effort to substantiate metaphysical vitalism through experimental inquiry. No conceptual system can be used to derive propositions whose content is not commensurable with that system. Yet, through the correlates of objectifying, "environmentally open" behavior, biological anthropology itself points beyond itself to those realms of reality in which human beings become truly human.

PEOPLE IN THE EARLY PALEOLITHIC AND MESOLITHIC PERIODS

BY HENRI V. VALLOIS

I. THE LATE PALEOLITHIC

From acultural standpoint, the Upper Paleolithic period differs markedly from the preceding ones: stone and bone toolmaking becomes more complex and reaches a very high level of sophistication, and art—which had previously been in its infancy—suddenly experiences a remarkable surge *[see A. Rust, p. 307; F. Eppel, p. 356]*. From an anthropological standpoint, the difference is even more striking. During the Mousterian period, Neanderthals lived—a human group so "primitive" in most physical characteristics that the majority of anthropologists do not hesitate to classify them as a distinct human species: *Homo neanderthalensis [see J. Kälin, p. 78 ff.]*. With the Upper Paleolithic, however, the Neanderthals disappeared—at least in Europe—so that one now encounters, for the first time in human history, forms whose general characteristics correspond to those of modern humans. They undeniably belong to the same taxonomic group as the latter, to the species *[cf. J. Kälin, p. 51 ff.] Homo sapiens*; this species first appears during the Upper Paleolithic. It is noteworthy that finds of the same age from North Africa and the Far East also belong to Homo sapiens. The Upper Paleolithic is the epoch in which this taxonomic species, as the final stage of human biological evolution, replaces the preceding fossil groups and achieves a range of distribution that has persisted to the present day. From a strictly anthropological standpoint, the history of modern humans begins in the Upper Paleolithic.

1. WESTERN AND CENTRAL EUROPE

By far the largest number of Late Paleolithic skeletons known today have been found in Western and Central Europe. These consist of remains from approximately 100 to 150 individuals, primarily from France, England, Italy, West Germany, and Czechoslovakia. However, many of these remains are incomplete or poorly reconstructed, so that the number of truly usable specimens is still quite insufficient

. Detailed studies have, however, revealed so many differences from modern human forms that one can speak of distinct races.

Unfortunately, experts are still far from agreeing on their number and nomenclature. In the first attempt at a comprehensive description, de Quatrefages and Hamy (1875) distinguished three fossil races: the dolichocephalic race of Cro-Magnon, the mesocephalic race of Furfooz, and the brachycephalic race of Grenelle. Later (1890), Testut added the Chancelade race; Verneau (1902), the Grimaldi race; Klaatsch (1910), the Aurignac race under the species name *Homo aurignacensis*; and Szombathy (1925), the Brüx race. Saller (1925) went even further and distinguished three new races: those of Brno, Oberkassel, and Barma-Grande. Other scholars, such as Morant (1930) and von Bonin (1935), however, reject these subdivisions. In their view, the people of the Upper Paleolithic would form a single, highly homogeneous group that was, as Morant puts it, even more homogeneous than the population of London in the 17th century or the peasantry in a rural district of Carinthia today.

The truth undoubtedly lies between these extremes. Several of the "races" thus created are based on remains of uncertain geological age, such as the people of Grenelle, Brüx, or Furfooz, who are certainly not of Paleolithic origin. Others are based on poorly reconstructed evidence. All humans of the Upper Paleolithic can likely be traced back to two main groups: the *Cro-Magnon* race and the *Chancelade* race.

A certain number of shared characteristics bring these two races closer together. Both exhibit a robust skeleton with clearly discernible muscle attachments, suggesting powerful musculature. Skull length often reaches 200 mm, which is rare among modern Europeans. The cranial index is dolichocephalic or mesocephalic; brachycephalic skulls do not occur. Their absence is characteristic not only of Neanderthals but also of Upper Paleolithic humans; the few alleged cases of brachycephaly (Grenelle and Solutré) correspond to skeletons that were erroneously assigned to the Paleolithic; they are in fact of a more recent date. Cranial capacity is well developed, at least comparable to that of modern Europeans: the brain was consequently just as large, which suggests that the intellectual abilities of Early Paleolithic humans were not inferior to those of modern humans. Finally, they share certain primitive skeletal features, such as the relative elongation of the forearm, which is absent in modern Europeans but found in many non-European races. Other features, however, distinguish the two races from one another.

The *Cro-Magnon* race is distinguished primarily by its tall stature. Most of its representatives (men) stand over 1.70 m tall; some exceed 1.80 m. This height is consistent with a number of skeletal features that indicate a strong development of musculature: the presence of the pilaster, a strongly pronounced longitudinal ridge on the femur; a flattening of the tibia (platycnemia, as described by anthropologists), the upper end of which tends to curve backward; grooves on the fibula, etc.

The head shape is dolichocephalic or mesocephalic. Viewed from the top, it has a pentagonal outline; the vault is always flat, so that the height of the head appears relatively small. The face is short but very broad, and above all, the eye sockets are particularly low; the forehead above them features well-developed brow ridges, suggesting that the eyes must have been set more or less deep. The nose is rather narrow and protrudes considerably. The chin was strongly developed. The face occasionally exhibits a slight prognathism, but this is usually absent, so that the profile of Cro-Magnon people appears straight and is undoubtedly very similar to that of modern Europeans.

The most typical representatives of the Cro-Magnon race were found on or near French soil, in the Dordogne (Cro-Magnon Cave) and on the Italian border in the Menton area (Baoussé-Roussé Caves).

In our opinion, the skeletons of mammoth hunters discovered in Czechoslovakia—which were used to propose distinct races (*the Brno* or *Aurignacian race*)—must be classified within the same major morphological group; the differences compared to the Cro-Magnon people from France do not justify such a distinction. These eastern Cro-Magnons ("Loess People"), however, do exhibit a slight prognathism, and their brow ridges are more pronounced. Above all, the skull is narrower and transitions from a pentagonal to an elliptical outline. Accordingly, the cranial index decreases, mesocephaly becomes less common, and dolichocephaly predominates.

The two skeletons found in the "Children's Cave" ("Grotte des Enfants") at Baoussé-Roussé, which date from the early Upper Paleolithic, are often regarded as representatives of a distinct group: *Grimaldi's* (Verneau *'s) Negroid race*; which would correspond to the advance into Europe of an African element closely related to today's Negrids. The main argument on which this view is based—the pronounced prognathism of the finds—is difficult to verify due to postmortem deformation of the face; it appears to be largely artificial. Other characteristics described by Verneau as Negroid are general features of Upper Paleolithic humans. The Negroid individuals from Grimaldi undoubtedly constitute only a primitive, perhaps more prognathic variant of the Cro-Magnon race. It therefore does not seem appropriate to assume a separate race here.

The Chancelade race differs greatly from the one just

discussed. Their stature is much smaller, only 1.60 m to 1.65 m for men (which brings them closer to the current average height of the French population). The skeleton is robust, even more massive than that of the Cro-Magnon people. The skull is long but narrow; dolichocephaly is usually clearly evident, and the shape of the skull's outline when viewed from above is elliptical, no longer pentagonal. Another difference: the vault of the skull is very high and forms, to a certain degree, a "keel" along the midline. Although the face retains a certain width, it is taller than that of the Cro-Magnons. It shows no trace of prognathism; the facial profile is distinctly European. The eye sockets are often described as high; in fact, they are low, though less so than in the Cro-Magnon race. It should be added that here, too, the nose is narrow, the chin is well-developed, and the capacity of the cranial cavity is considerable.

The Chancelade race is found mainly in southwestern France. As far as we can rely on the still all too sparse evidence, it would have been less widespread than that of Cro-Magnon. Nevertheless, the remains of the Chancelade race extend as far as the Rhine *[Oberkassel near Bonn]*. The skeleton found at *Combe Capelle* is also likely to belong to this race (it is also regarded as the prototype of a distinct Aurignacian race).

Do the two races of the Upper Paleolithic coexist? It is often claimed that the Cro-Magnon people correspond to the Aurignacian *[sensu lato]*, those of Chancelade to the Magdalenian, while the Solutré people are said to be the result of a distinct race, with a tendency toward brachycephaly and of eastern origin. These claims lack any solid foundation. The few skeletons attributed to the Solutré people were found under controversial stratigraphic conditions; it is best to disregard them. The Cro-Magnon and Chancelade people both appear from the beginning of the Upper Paleolithic and are found in both the Aurignacian *[sensu lato]* and the Magdalenian. Neither can be considered the older of the two.

The question of *the origin of Upper Paleolithic humans* gives rise to lively debate. Do they descend from the Neanderthals, who inhabited Europe before them and during the Middle Paleolithic, or are they of non-European origin? Anthropologists' opinions are divided between these two hypotheses. Proponents of the first hypothesis claim that there are transitional forms between the Neanderthals and the people of the Upper Paleolithic, such as the people of Předmost. On the other hand, they consider it impossible that an immigration from outside took place at the beginning of the Upper Paleolithic. The Aurignacian *[sensu lato]* culture, they add

, did not suddenly replace the Mousterian everywhere; transitional strata exist; humans, too, had to change, and perhaps the harsh climate of the Ice Age was the cause that determined this transformation. Above all, the American anthropologist Hrdlička advocated this hypothesis.

In contrast, numerous experts, following M. Boule, note that the Neanderthals were already too specialized for us to derive the humans of the Upper Paleolithic from them. The time span separating Neanderthals from Upper Paleolithic humans is too short for such an evolution to have taken place, and the few Neanderthal-like traits observed here and there in Upper Paleolithic humans can simply be explained by isolated instances of interbreeding. This theory has recently received very strong support from the discoveries at Piltdown (1912), Swanscombe (1935), and, above all, Fontéchevade (1947), which showed that, long before the last Ice Age—and thus before the period of Neanderthals' main development—other humans had lived in Western Europe who were much closer to us than the Neanderthals and formed a kind of "Praesapiens" lineage [see S. Kälin, p. 82 ff.].

Yet these humans are absent from our Middle Paleolithic. Therefore, the transformation of Praesapiens into Sapiens would have taken place somewhere in the East, where their descendants would have lived. From there, the Aurignacian people, with their new culture, would have come to take the place of the extinct Neanderthals [see *A. Rust, p. 507*].

Although interbreeding seems possible, on the whole it is probably certain that the Neanderthals disappeared very quickly in the face of the new arrivals, and the recently expressed idea that the Cro-Magnon people were hybrids resulting from the mixing of the two groups does not hold up in the face of the facts. We know nothing about the causes and circumstances of this transition, which was to have such decisive consequences for the later development of Europe.

One final consideration remains: *the relationship between the people of the Upper Paleolithic* and modern races. Many hypotheses have been put forward on this subject.

The Chancelade Man was classified as belonging to the Mongoloid race, primarily the Eskimos, with whom he was said to share numerous similarities. It was then claimed that the people of Grimaldi were Negroes or even Bushmen, and in addition to the arguments based on the skeleton, reasons were cited that relied on apparent analogies between Paleolithic statuettes and Bushmen women, primarily the shared presence of steatopygy. The man from Combe-Capelle was attributed various kinship relationships—

: for Haddon, he is a Eurafrican; for Giuffrida-Ruggeri, a Proto-Ethiopian; and for Mocchi, an Australoid.

None of these views can be considered entirely well-founded. The Chancelade Man is no more an Eskimo than the Grimaldi Man is a Bushman or a Negro, nor is the Combe-Capelle Man an Australian. In all these cases, we are dealing with older forms of Homo sapiens, and together with the Cro-Magnon Man, they belong to the same group as modern Europeans. However, they possessed certain primitive traits that subsequently disappeared from Europe, while they continue to exist in various non-European groups. This explains the similarities.

2. OUTSIDE EUROPE

At present, human remains are known primarily from French North Africa (Tunisia, Algeria, Morocco) *[see H. Baumann, p. 173 ff.]*. And here, too, we know nothing about humans from the beginning of the Upper Paleolithic. All skeletal remains date from the end of the North African Upper Paleolithic, the Oranian and Capsian periods. These periods largely coexisted but extended well into the subsequent epoch, the Mesolithic *[and even later periods: see K. J. Narr, p. 505 ff.]*.

As in Europe, these people are clearly to be regarded as H. sapiens. However, they belong to a new type, the *Mechta race*—tall individuals, ranging from 1.70 m to 1.80 m in height among males, with an extremely robust skeleton and the same elongation of the forearm as observed in Europe during the same epoch. The head has a brutal appearance, caused primarily by the widely protruding brow ridges. It is very long, has a very thick skull wall, and a distinctly pentagonal outline with a dolichocephalic or mesocephalic calotte. The capacity of the cranial cavity is considerable. The vault appears high, often slightly keeled. The very broad and rather low face exhibits a slight prognathism. The nose is broad, with a tendency toward flattening; the eye sockets are very deep; the chin is strongly developed.

Many of the characteristics mentioned point to an undeniable similarity with the European Cro-Magnons, whose more brutal and “primitive” counterpart the people of Mehta seem to be to a certain extent. Some experts, however, emphasize the differences, suggesting that they are better regarded as a distinct race. The time of their appearance in North Africa is unknown to us. Yet we may rightly assume that the bearers of the Aterian culture were Neanderthals, since this culture imperceptibly follows the Mousterian [cf. *H. Breuil, p. 272*],

which is why the people of Medta would have been newcomers who arrived from the Ibero-Mauritanian region (Oran) and from the east.

While we must rely on hypotheses regarding the origin of the Medta people, their fate, on the other hand, can be better substantiated. Despite the arrival of other human groups during the Mesolithic, their descendants continued to live in North Africa until very recently [cf. *H. Baumann, p. 172*; *S. Alcobé, p. 175*]. In the Canary Islands, where they presumably arrived during the Neolithic period, they formed the main component of the "Guanche" population, whom the Spaniards subjugated in the 15th century and largely exterminated. Anthropologists had long noted the resemblance between the Guanches and the Cro-Magnon people; they explained it by positing a migration of the latter through Spain and Morocco. But the resemblance of the Guanches to the Mehta race—whose arrival in the Canary Islands is far more plausible than the hypothetical migration attributed to the Cro-Magnons—is no less striking. Thanks to their insular location, the Canary Islands thus served as a refuge until 500 years ago, where a population from the Upper Paleolithic was able to preserve its physical characteristics as well as part of its ethnic identity.

Of the skeletons of the same age discovered in Asia, in the Beijing area *[Chou-kou-tien]*, one exhibits a type similar to that of the Cro-Magnons, while another resembles the Chancelade race *[cf. J. Kälin, p. 68]*. These two earliest known races of Homo sapiens on our continent would thus have been widespread even outside Europe, extending far to the east. Perhaps they also constitute the origin of those people who, since the end of the Paleolithic, migrated to the Americas via the Bering Strait.

II. THE PEOPLE OF THE MESOLITHIC

1. WESTERN EUROPE

The existence of an intermediate epoch between the Paleolithic and the Neolithic was long overlooked. Today, there is no longer any doubt about it. We know that this period, which was initially thought to have lasted only a short time, actually lasted a very long time and extended in Europe into the third millennium B.C. Furthermore, it has been established that this period was by no means uniform, but rather encompassed several, at times very diverse cultures, some of which intermingled with the earliest manifestations of the Neolithic [see J. G. D. Clark, p. 318].

As with the Upper Paleolithic, skeletal remains from the Mesolithic have been found mainly in France and Germany; others come from Portugal and

Great Britain; a few, rather sporadic remains come from Scandinavia and southern Russia. Overall, the evidence is insufficient. Nevertheless, a preliminary synthesis can be attempted. In doing so, four main groups can be identified:

1. The first two groups correspond to the descendants of Upper Paleolithic humans. The vast majority belong to the *dolicho-mesocephalic type of Téviec*. These were people of small stature, averaging 1.60 m, with particularly well-developed bones in the upper extremities. The skull is dolichocephalic or mesocephalic with a pronounced vault, which is often more or less keeled along the midline. The brow ridges are always strongly developed. The face is broad or moderately broad, although not as wide as that of Upper Paleolithic humans; however, the eye sockets are low, as in those individuals, while the nose is broader, and the facial profile features protruding cheeks, which, while not constituting true prognathism, at least suggests mesognathism.

The Téviec type appears to have been widespread during the Mesolithic: it is found in western France in the Breton strata of Téviec and Hoedic *[see J. G. D. Clark, p. 343]*; it includes most of the skulls from the famous Bavarian site of Ofnet *[see J. G. D. Clark, p. 344]*; a number of skeletons from southern France, western Germany, and England also appear to belong to this group. The interpretation of the Téviec type is, however, controversial.

Certain scholars view this as a hybrid group resulting from the interbreeding of Paleolithic dolichocephals with brachycephals who arrived later. However, this thesis presupposes the existence of an earlier brachycephalic center; as will be shown below, this assumption is untenable.

Other scholars view the dolicho-mesocephalic Téviec type as pygmies. The presence of a pygmy race in Europe during the Mesolithic period has been linked by some anthropologists—notably Kollmann—to a more general theory, according to which all tall human races were preceded by pygmy races. Descendants of these Pygmies are said to still live in Asia and Oceania today. Although they have disappeared from Europe today, the Téviec type is supposed to prove that they lived here in prehistoric times.

According to other authors, such as Menghin, these Pygmies are said to have come from North Africa, where they were the bearers of the Capsian culture, which in turn represents the origin of the European Tardenois culture *[see J. G. D. Clark, p. 321]*. Once predominant here during the Mesolithic, they are said to have disappeared in subsequent periods, though the presence of some dwarfed individuals is said to be detectable in the Neolithic and Bronze Ages, and even today in certain regions such as Poland or Sicily.

All modern research indicates that the theory of the “Pygmies of Europe” must be rejected. The height of humans

at Téviec exceeds the generally accepted limit of 1.50 m for Pygmies. It approaches that of certain contemporary European groups. If, here and there, both in the Mesolithic and Neolithic periods, people of very small stature occur, these are merely individual variations, such as are found in all groups; they have no racial significance. Finally, as we shall see below, the study of the Capsian sites has shown that tall individuals existed in North Africa during that epoch.

The dolicho-mesocephalic type from Téviec actually descends from the Chancelade race of the Upper Paleolithic. In its form and cranial vault, it has retained most of the characteristics of that race. The main differences lie in a tendency toward cranial widening, which increases the number of mesocephalic individuals relative to that of dolichocephalic ones, as well as in various changes in the facial features. Should these be seen as the first signs of an evolutionary trend that will continue to intensify in subsequent eras?

2. The so-called *dolichocephalic type from Ofnet* [cf. *J. G. D. Clark, p. 344*], a second group, corresponds to individuals with longer skulls than the previous ones, a lower cranial vault, a "chignon," and a low face. Their height is considerable here. Although relatively rare and represented only by incomplete skeletons, this type nevertheless has a considerable distribution: it is found in Germany, in Scandinavia (Sweden and the Danish marshes of Maglemose), as well as in the Crimea, where various remains must presumably be attributed to it. Its significance can hardly be doubted. It is the descendant of the Paleolithic Cro-Magnon race, whose anthropological characteristics largely persisted unchanged.

3. In contrast, a new element is encountered in Portugal in the accumulations of marine mollusk shells, associated with "Tardenoisian" artifacts from the Tagus Valley: the *dolichocephalic type of Mugem*. These are people of small stature, like the dolicho-mesocephalic individuals of Téviec. Averaging 1.60 m in height, they, too, possess a long, fairly high skull, but its dimensions are less pronounced, and the cranial vault is not keeled. The face is significantly narrower and at the same time higher; the eye sockets are also higher. The profile exhibits a certain degree of mesognathia. The skeleton is much more delicately built than that of the preceding types.

The Mugem type has also given rise to much debate. It was formerly considered a descendant of the Cro-Magnon people, with whom it shares, despite its small stature, certain remarkable similarities—

. Later, the Portuguese scholar Mendes Corrêa emphasized its Negroid appearance and classified the Mugem type into a southern branch related to a series of dark-skinned groups: the Weddas and "Dravidians" of India, the Ethiopians, and the Australians; this constitutes Giuffrida-Ruggeri's "Equatorial Block." Originally located in Africa, the people of Grimaldi and Combe-Capelle—who had come to Europe with the Aurignacian culture during the Paleolithic—and subsequently the people of Mugem, who emerged from this block with the "Tardenoisian" culture during the Mesolithic, are said to have originated from this group. To denote their kinship with the Negroid races, Mendes Corrêa gives them the name *Homo afer taganus*. In his view, they would have played the role that other scientists attribute to the African Pygmies. Here, too, the theory goes beyond the facts, because the people of Mugem exhibit far more skeletal characteristics of white races than of black races. Their slight prognathism is not sufficient to classify them among the latter, and a classification within the heterogeneous group of the so-called "Equatorial Block" [*cf. J. Imbelloni, p. 197*] cannot be justified. Yet they are not descendants of the Upper Paleolithic people either.

The people of Mugem truly represent something new, and their counterparts can be found in Palestine during the same era, as well as among certain "Capsian people" in North Africa. In Europe, as in the Far East and Africa, both groups represent the first appearance of a race that subsequently spread extensively throughout the entire Mediterranean basin and today constitutes one of the fundamental anthropological elements of these regions: the Mediterranean race, the "Homo albus mediterraneus" of anthropologists.

4. The three preceding types were dolichocephalic or mesocephalic, as were the people of the Upper Paleolithic and, even earlier, the Neanderthals and the "pre-hominids." In the anthropological history of humankind, the emergence during the Mesolithic of a new type characterized by a short but broad—that is, brachycephalic—head constitutes a fundamental event. This skull shape appears here for the first time and, despite its late appearance in the evolution of human groups, spreads very rapidly and over an extraordinarily wide area. It constitutes a distinguishing feature of numerous modern races.

However, the earliest brachycephalic individuals are still quite few in number: in Mugem, such individuals were believed to have been discovered. It appears, however, that the evidence on which this conclusion was based was inaccurate and that the skulls in question had been disfigured post mortem. A single site, that of Ofnet *[see p. 107]*, certainly contains brachycephalic individuals: however, at most five to six individuals with broad and short skulls, a flattened vault, a rounded forehead, and a broad, low, and entirely orthognathic face; their height is unknown. This is the brachycephalic *type from Ofnet*; it represents the

very gradual emergence of an element that will not truly develop among us until the Neolithic. In that period, we will have the opportunity to explain its origin and significance.

2. OUTSIDE EUROPE

There is an already highly developed Oriental Mesolithic culture in Palestine: the *Natufian [cf. J. G. D. Clark, p. 324]*. Its people belong to the same type as those of Mugem: they are of small stature, dolichocephalic, with a medium-sized face, slightly prognathic, and a broad nose. Their ancestors are unknown, as we have no evidence of Early Paleolithic humans in the Near East. However, a connection between the people of the Natufian culture and their contemporaries in Portugal is established through the Capsian culture in North Africa *[see K. J. Narr, p. 505]*.

In the previous section, we saw that the Upper Paleolithic race of Mechta continued into the Capsian. Yet this is not the only such case. On several occasions, alongside representatives of the Capsian culture, other human remains have been found whose resemblance to the present-day inhabitants of Algeria and Tunisia is so striking that for a long time it was believed they came from modern burial sites. This explanation must be discarded. Recent archaeological research has shown that the majority of these skeletons do in fact date from the Capsian period. They are not Pygmies, as had been assumed a priori. They, too, belong to the same primitive Mediterranean group as the people of Mugem and those of the Natufian culture. This racial type therefore appears to have been widespread during that period throughout the entire southern rim of the Mediterranean, from Palestine to the Iberian Peninsula. Where might it have come from?

A precise answer to this question cannot yet be given. However, we have seen that earlier, before the Capsian period, the Mehta race predominated in French North Africa; and there is probably no doubt that it was the Cro-Magnon and Chancelade races that inhabited the Iberian Peninsula during the Upper Paleolithic. Consequently, the Mediterranean peoples in all these regions are not autochthonous; they can only have come from the East. The anthropologist Sergi identified their cradle in Egypt, a country whose Mesolithic population is unknown to us, but which in subsequent eras represented an important center for the Mediterranean peoples. But throughout the Near East as well, the Mediterranean peoples constituted the main

element. They may just as well have originated in these regions. In any case, what is essential is their origin in the eastern Mediterranean region. For Europe and French North Africa, they were newcomers during the Mesolithic.

Apart from the regions mentioned, our knowledge of Mesolithic peoples is extremely limited: it is confined almost exclusively to East and South Africa *[cf. H. Baumann, p. 173 ff.]*, that is, to regions where human remains have been found in deposits identified with the Mesolithic; in reality, however, these deposits contain artifacts that differ considerably from those in Europe and undoubtedly extend into a much later period *[see K. J. Narr, p. 505]*. These tool industries correspond to racial groups that point to those inhabiting the same regions today: white or brown peoples, the so-called Hamites or Semi-Hamites in East Africa, and the Strandlopers, the precursors of the Bushmen in South Africa. The most interesting fact is that none of these Mesolithic humans can be classified as true Negroes.

The only skeleton related to the Negrids—and even this is not without reservations, since it also exhibits some characteristics of the Bushmen—is the fossil human from *Asselar*, which was found in the south of the Sahara and dates from an era when this present-day desert region was still fertile; thus, it dates from the Mesolithic rather than the Upper Paleolithic, as was initially believed. This is the only Negroid fossil known to date. And it reveals nothing about the original origin of the Negroid people in Africa.

BIODYNAMICS OF THE CONTINENTS

PRELIMINARY REMARK

Only in recent decades have the highly fragmented subdisciplines of comparative hominid studies coalesced into a holistic *anthropology* —the science of creative and active human beings themselves. There are primarily two anthropological categories of interest to the historian: *race and people*, or, more precisely: variety and population. The confusion surrounding these terms has led to an obscuring of the issues—a phenomenon that is not always unintentional. The terms and their referents do not coincide, neither across different languages nor in the linguistic usage of various circles, nor in the perceptions of individuals.

There is only one point on which everyone agrees: that the concept of race is an essential phenomenon of living beings. All living beings manifest themselves in the same individual through *numerous* biological aspects. For every single human being is characterized equally by age stage, sexual type, and constitution as by racial characteristics and ethnic affiliation. Taken together, all these *phenotypic* aspects are determined in their traits that remain constant across generations by the *genotypic* genetic makeup of each individual. Thus, the genotype initially appears, if not as the cardinal factor, then at least as the generally causal factor. As such, however, it constitutes only a theoretical abstraction derived from real phenomena, albeit one that is well-established. This abstraction traces the many psychophysical formative impulses that overlap and interlock in individual development back to hypothetical combinations of genetic endowments, which—given the millions of possible genetic combinations within a single individual—become tangibly real only in the rarest of cases. What can truly be grasped in its entirety is always only the phenotype —the physical appearance—never the genotype—the hypothetical genetic blueprint presumed to underlie it. Thus, the reliable phenotypic methods of observation, measurement, type diagnosis, and type quantification (so-called “type formulas”) naturally fail when applied to the genotype. And as a reality, the genotype is not opposed by a specific biological aspect, but rather by the individuals themselves (who are then further shaped physically to some extent and psychologically to a considerable degree by the environment). Some, however, see precisely this as the “race”: the intangible causality of group constancy.

Others, however, adhere to the reality of the constant phenomena themselves. Here, however, biological observation reveals that in widespread groups of forms or species, whose individual members are similar in their physical and psychological manifestations—

and are capable of reproducing among themselves, that the similarities become all the greater and the number of shared characteristics all the higher the smaller the regional and, ultimately, the more restricted local groups considered. But how can a theoretical order be imposed on these continuously and finely graded transitional series; where should the classificatory boundaries be drawn, without which our thinking cannot function? It is clearly evident that this question cannot be answered by the material itself, but is decided solely by the criterion of expediency. Groups of similarities that are numerous and widespread—or even merely conspicuous—and bound by regional ties are then designated as varieties or races; smaller ones as local types or regional types. Within these groups, the natural variability of the characteristics crucial for differentiation leads to a gradation from highly typical to less typical representatives, and the (thus only limited) constancy of the typological character is, over time, transformed into mutative evolution: race is a process. It would therefore by no means be wrong to distinguish a very large number of varieties within a species, but it would not *be practical*. It would certainly be wrong, however, to conclude from the varying numbers and classification systems used by different authors that biological circles of similarity do not exist at all. Circles of similarity are objective natural realities; classifications are subjective conceptual aids. Many, however, view precisely these regional groups of similarity as the actual "races."

While in the case of animal circles of similarity, both strict ecological ties and psychophysiological differentiation lead to a relatively clear spatial separation and racial repulsion, these are largely nullified in hominids by their defining characteristic—intellect and, consequently, culture. For culture, after all, means breaking through natural barriers. Thus, the regional hominid groups—already clearly evident among the Neanderthals—exhibit a more or less pronounced intermingling and, consequently, a mixing of types: the aforementioned mutative evolution no longer takes place within the original *animal* varieties, but now occurs within the new social units of mixed local groups, tribes, and ultimately peoples. Alongside the continuing regional groups of similarity or varieties, social, typologically mixed reproductive communities or populations have emerged. Within them, the typological composition is constantly shifting. This occurs both quantitatively and qualitatively through the stratification of peoples and the sifting effect of migration, as well as through the subsequent mixing, selection, and differentiated reproduction within social strata and national groups. Some, however, wish to see the actual "races" in these socially—that is, linguistically and traditionally—connected populations or ethnic groups.

Thus, we have three fundamentally different biological categories for which the term "race" is used, depending on one's standpoint, language, or perspective: the assumed *genotype* as the primary cause of all individual real types or constitutions; the supra-individual real *regional type* as a spatial group of similarity or variety; and the supra-individual and real *ethnic group* as a social, tradition-bound reproductive circle or population. In addition to these, there is the circle of individuals who are citizens—the *nation*—which is not a biological but a political phenomenon,

will be touched upon only briefly here. It is clear, **however**, that in this state of affairs—regarding these factual categories—no clarity can be achieved unless, at the outset of every discussion, the conceptual boundaries—the categories of thought—are delineated and, ideally, the overused, overloaded, and ambiguous term "race" is **set aside** until it is clear what is actually meant in each instance. The overwhelming majority of biologists and cultural researchers writing in German, as well as most scholars writing in other languages, understand "race" to mean a regional group of similarities, or a variety. **When the word "race" is used in the following articles, it is therefore used in the sense of "variety."**

In all biological sciences, the so-called "right of priority" applies to the naming of individual varieties; according to this principle, the name given to a form by the first person to name and describe it in the binomial *nomenclature* is irrevocable. This system was introduced by Linnaeus's **Systema Naturae** (1758), which established **Homo sapiens** —a name much disputed but the only one valid for nomenclature—for the human genus and species. This is then followed by the respective variety designation as a ternary element. Alongside the binary (ternary) Latin nomenclature stands the vernacular nomenclature, for which what is mandatory in the former is considered a recommendation. In the vernacular nomenclature, to avoid confusion with linguistic and folk names, the suffix -id is today almost universally added to the root of a variety's vernacular name to denote the "pure," i.e., characteristic type; "-oid" is used for mixtures with a genetic connection; and "-iform" for morphological similarity without a genetic connection (australid variety, australoid type, australiform ancient stratum). Unfortunately, the lax treatment of common names even within anthropology (which is all too easily explained by the inadequate biological training of researchers of anthropological material, who in the past mostly came from related disciplines) has led to a flood of renamings and reclassifications, in which sometimes a much-invoked right of usage, and sometimes—and more frequently—mere authorial whim play a regrettable role. It may therefore be useful—and serve as a guiding thread for the following discussions—to list both ternary and common names in a table from the perspective of the right of priority and to enumerate some of the renamings that are, strictly speaking, invalid [*see pp. 222 ff.*].

It goes without saying that such an overview does not constitute a rigid scheme, neither with regard to the number nor to the hierarchical ranking of the individual forms. For the continuity and diversity of the hominid form series, both in time and space, naturally entail a certain *degree of flexibility* [*see, e.g., the differing classification of Upper Paleolithic human forms in H. Vallois, p. 100, and E. von Eickstedt, pp. 119 ff.*]. Yet there are exaggerations here as well. On the one hand, a desire for innovation and vanity lead to superfluous "cliques of authors" that complicate the overview and run counter to the purpose of a classification; on the other hand, a lack of insight and knowledge leads to overly broad generalizations that obscure both natural connections and cultural and historical relationships, and run counter to the spirit of scientific methodology and systematics (the so-called tendency toward fragmentation and overgeneralization). It is, of course, entirely unreasonable—and this should therefore be noted only in passing—to attempt to derive a "theory of dissolution" from *the* phenomenon,

that this or that local form or variety can be derived not only from a single ancestral form but from various ones. “Pure” breeds have never existed. Regional groups of forms have always been in procreative intermingling and have consolidated into new clusters of types over long generational chains. The same biological process, artificially accelerated by humans, can be observed in the formation of new dog breeds from quite different ancestral forms. As morphological and breeding breeds, they are no less distinct for the fact that their formative genetic makeup was originally derived from divergent biotypes. It is not the more or less hypothetical gene pool, but the real, living phenotype that determines classification; not presumed theoretical origin, but the actual differential diagnostic status. However the classificatory tendencies or biological discussions may unfold:*“breed”*here is always unambiguously *a variety*.

THE BIODYNAMICS OF EUROPIDS

BY EGON FRHR. VON EICKSTEDT

Varietiesor races—whether in plants, animals, or humans—are always the result of a *regional* context of development. For this context manifests itself within the respective structural framework of the species through the ceaseless emergence of new characteristics, mostly minor mutations, which nevertheless accumulate. Their free intermingling across the entire globe—an intermingling through reproduction—would soon dissolve every local distinctiveness of a type. But this is prevented by the regional ecological ties—indeed, the binding—of reproductive groups within species to their habitats: plains or hilly country, steppe, marsh, or forest; short summers and short harvests, or other conditions. *Out of regional, but also social, isolation, the progression of species evolution formed the races, the human varieties.*

The greatest spatial barriers we know of are set by climate zones, and they are compartmentalized by oceans and mountains. *So many compartments, so many varieties—that is the picture of prehistory.*

The greatest change in habitats that we know of occurred during the ice ages. Four major advances, characterized by longer, snowy winters and shorter summers—separated by the long warm periods, the interglacial periods—mark the *glacial periods*, which we can estimate to have lasted a total of more than half a million years. Four times during this period, glaciers, masses of snow, and firn fields advanced from the poles and mountain peaks; four times, as they swelled and receded irregularly, the tropical primeval forests and former savannas sank into the rain-drenched humidity and gloom of millennia-long *pluvial periods* or rainy seasons. As a result, the favorable habitat of the temperate zones in the land-rich Northern Hemisphere was squeezed from both sides: ice and snow from the north, primeval forest and rain from the south. And this fourfold repetition, with its advances and retreats, must have affected the fauna at the mountain passes and straits like a pumping station with pressure and suction.

In addition to climatic forces, there are tectonic forces—the movements of the Earth's crust. As a result, *sea intrusions* occur, such as those that created the Indonesian archipelago from the South Asian land bridge, cut through the English Channel, or reduced the size of the Mediterranean land bridges; then there are *land uplifts*, the greatest of which was the uplift of the Asia-

landscape chambers with their southward pressure, which led to the formation of the mighty barrier of the Himalayas. Every spatial change here forced the primordial living world—from plants to humans—to gradually migrate along the lines of least resistance, and the ensuing struggle of all against all brings about further biological development through *mixing, selection, and the pressure to adapt*.

The two cardinal phenomena that determined and initiated the world history of human varieties are, first, the Late Tertiary uplift of the Central Asian landmasses, which created the decisive center of biodynamic pressure, *and, second, the last Ice Age,* whose glacial compartmentalization of the transversely divided Eurasian continent created the three major racial groups.

It must also not be overlooked that the Eurasian continent represents the largest landmass conducive to life. For *a large amount of space also means a large population*, and larger populations mean greater pressure. Thus, paleontologists are well acquainted with the dispersal of biological communities, or "biocenoses," from the Central Asian center over the course of the last geological eras—this pattern recurs among all higher life forms, and it is no different for hominids. This becomes all the more evident given that dense tropical forests, impoverished and peripheral regions, and remote, isolated islands *lead* to a *standstill in evolution*. Consequently, these areas—located far from Eurasia—preserved the respective more ancient forms, which were arranged in a belt-like pattern around the central landmass. The *ancient forms* of hominids, too, are found far removed and hidden from the dynamic, pulsating, selective, and displacing center of movement and its outward-reaching spheres of influence: in African and Melanesian primeval forests and islands, in African and American desert steppes and continental extremities, or on remote islands. It is therefore by no means a coincidence that even the *most archaic* human form today has survived on the *most remote* major island, in Australia.

The Pleistocene ice ages, however, laid a barrier *across Asia—the largest continent*—in the form of snowfields and glacial chains, stretching from the Himalayas and Tien Shan through the Altai to the cold regions of northeastern Siberia. This largely cut off all life in the East and West from one another. Isolated in their "chambers," the Europids developed in the West and the Mongoloids in the East. The melting of the ice and the opening up of new habitats and routes later led to a gradual migration of the western groups into Western Europe and of the eastern groups toward the south. There, however, south of the lakes and mountain ranges—

barriers stretching from the Near East to Tibet, the southern forests with their southern forms also retreated in turn. As a result, the southern human form was divided into its present-day western African and eastern Melanesian branches. *As a result, we have the three present-day subspecies or major racial groups of the "White," "Yellow," and "Black,"* which, through the interlocking, pushing, and pressing of the major biological movements that had been set in motion, increasingly and rapidly displaced the ancient forms into the outermost peripheral and refuge areas.

If we say that nothing in nature is stable, this naturally applies as well to hominids and their varieties. Evolution presses on—species give rise to new stratifications of species; *races give rise to new racial variants*, local forms, transitional groups, and, very gradually, even other varieties. With growing culture and increasing intermingling of forms, one form flows into another. *Almost every clearly definable prehistoric culture therefore has its corresponding distinct type*, whether as a locally pure form or as a culturally mixed product of fusion. The racial roots are clear, and the new elements are no less so: *race is a process*.

Thus, from race, space, and culture emerged the ethnic types of the present day, which stand *alongside* and above those of the races and varieties, and which cast a slight psychomorphological veil of ethnic variation *over* the racial types within each ethnic group. This is likewise expressed in somatic "types"—in the type of "the" Roman, "the" Jew, "the" Englishman, "the" Swabian, or the "Franconian" face, the "Lower Saxon" face, and so on. As such, they are naturally even rarer to find in "pure" individual manifestations—that is, those combining *all* characteristic features —than is the case with racial types, and yet, like the latter, they are unmistakable.

It is thus evident that while a variety involves an original and predominantly *geographical* grouping and concentration *of similar* basic types, peoples (or, more accurately, ethnic groups) involve a more recent and predominantly *social* grouping *of various* basic types. Variety is thus primarily a spatially bound group of similarities, whereas a population is a tradition-bound reproductive group. The distinguishing, so-called differential-diagnostic characteristics *of both* groups are, of course, hereditary. Consequently, these two external, real spheres of manifestation (phenotypes) *likewise* possess a certain internal, conceptual "hereditary type" (genotype). However, the variation type, the population type, and the hereditary type belong to three *different* biological categories and lie on three different conceptual levels. Since the *word* "race" (race, raza, etc.) is used by various authors and in various languages to refer to one, the other, or even several of these phenomena, a persistent confusion of terms has arisen, leading to a truly hopeless jumble and a failure to understand one another. It has also led to the situation where that hatred of peoples—which seeks to strike at the biological substance of the unpopular—has been labeled the ambiguous *term "racism,"* which has resulted in further confusion.

These dynamic processes have not yet come to an end. *Areas of destitution and dire circumstances* still *lead to the atrophy of form and abilities*; *abundance and wealth* still *tempt people into stagnation. The tension between abundance and scarcity constantly compels us anew to deploy every possible strength and knowledge.* Thus, both changes and tensions in the external world

of the ice ages and crustal movements, with their consequences, as well as developments and moments of tension within the human inner world, to a social and racial-historical dynamic. The *spatial connection* of *the spatial types*—that is, the varieties—and their biocenotic community formation should be emphasized once again. All too often, capable but one-sided researchers have abandoned the facts rooted in the soil in favor of theories divorced from reality. Without a defining spatial context, there is no defining variety; without spatial isolation and spatially conditioned confinement, there is no emergence and spread of races; without spatial interaction, there is no dissolution of racial types into communities of peoples.

In this way, biodynamics—and with it the "racial dynamics"—of the hominids arose. It shifted and corrupted what isolation had created: migration versus compartmentalization, mixing versus isolation. In what follows, we will briefly outline the individual stages of the resulting world history of human varieties for Europe and the Europids.

1. THE PREHISTORY OF THE EUROPIDS AND THE INFLUX OF NEW FORMS

The oldest hominid find in Europe is the so-called *Heidelberg specimen* [*see J. Kälin, p. 75*]. It bears no morphological indications whatsoever of recent hominids, let alone Europids. During the Riss-Würm Interglacial and later, the so-called *Neanderthals* were present throughout the European-Oriental region from around 140,000 to 70,000 BCE. However, they were by no means the only hominids of this period; non-Neanderthal forms also lived alongside them and prior to them. The evolution of hominids shows clearly enough that we must expect a continuous emergence of new lineages and frequent merging of related evolutionary branches.

The retreat of the Central European steppes and tundras northward behind the receding ice opened *up two* initial *routes into Europe* for all living organisms—including hominids—as early as the Interglacial and during the Postglacial periods: via the Gibraltar Bridge and through the Caspian Gateway. For during the glacial period, the Sahara constituted a lush habitat, and southern Siberia was always spared the harshness of the Ice Age—these regions served as biological "reserves." Between the two, however, lay the chain of mountains and lakes stretching from the Balkans through Anatolia and Iran, culminating in the sharply defined boundary of the Himalayas. Gradually, the part facing Europe also became forested

of this barrier, and the living world of its open meadows and park-like landscapes was likewise drawn into the influence of the bio-communities on the European periphery. This influence ultimately had to extend across northern Germany all the way to the previously completely ice-covered Scandinavian Shield.

The biocenotic and, in particular, the anthropodynamic consequences of this are clearly discernible.

Suddenly, during the Early Paleolithic (approximately 100,000 to 20,000 BCE)—specifically during the warmer interglacial period between the first two peaks of the Würm Glacial Period—two entirely new cultural groups emerged: the Cro-Magnons and the Aurignacians, characterized primarily by blade cultures [*see A. Rust, p. 292 ff.*]. The Cro-Magnon group [*here understood to exclude the Brünn group; cf. H. Vallois, p. 101*] gradually spread far to the north during the postglacial period and across northwestern Germany to Sweden, then even as far northeast as the Baltic region, as evidenced by finds throughout the area. At this point, however, the *decline in stature and pigmentation* that we observe in their direct modern descendants begins to appear: *small, dark Berberids* from the Cro-Magnon lineage *in the south* and *large, light-skinned Dalids* from the Cro-Magnon lineage of Western European origin *in the north*.

The situation is different for the *Aurignacids* (Loess race, Brno race: Homo sapiens fossilis, Kramberger 1905). This group, which is likewise tall but has an elliptical, low-skulled cranium and is morphologically more primitive—with still robust brow ridges and slight prognathism—is primarily distributed across *Central and Eastern Europe*. It thus overlaps with the Cro-Magnon form in a broad transitional zone. However, to combine it — without taking into account the sharp differentiation between the respective character types — with the Cro-Magnons, which are fundamentally different in style, into a collective form rich in variants *[as proposed by H. Vallois, p. 101]* is not advisable and obscures the anthropodynamic relationships. The Aurignacian people themselves, however, do fall into two distinct groups: their western branch (Combe Capelle) *[extended by H. Vallois to Chancelade; cf. p. 102]* is slender and of medium stature, while their eastern branch (Brno, Předmost, Fatma Koba near Yalta) is stocky and tall.

This leaves the question *of* their *origin*. Since their associated culture is more prevalent in Palestine than in Western Europe, it stands to reason to link them to the opening of routes from the Eurasian mainland toward the west *(see A. Rust, p. 294 ff.)*. Their distribution in Central Europe and North Africa (Brno, Afalou), in turn, suggests a division into a northern and a southern branch. In the north, the transition to the later, so-called Teuto-Nordids is gradual—

, while in the south, the connection to the western Mediterranean Protomediterraneans is no less well-documented. Thus, here too—just as with the western form of the Cro-Magnon—a *decline in stature and pigmentation* occurs, as we see in today's direct descendants: *small and dark Mediterraneans* from the Aurignacian Oranien-Capsian-Natufian source *in the south* [cf. *H. Vallois*, p. 108 ff., *K. J. Narr*, p. 505] and *large, handsome Nordids* of Central-Northern European racial origin *in the north*. The two northern branches thus survived the later Würm glaciations.

This leaves only the *Chancelade race* [*in the narrower sense, i.e., excluding Combe Capelle; cf. H. Vallois, p. 102*] with its Eskimoid characteristics. It may well be regarded as at least a *subarctic variant* of the proper Cro-Magnons and thus an Arctic variety.

The occurrence of a so-called "Negroid"—more correctly, of course, merely "Negroform"— *Grimaldi type* (more of an Ethiopo-Boskopid character than a truly Negroid one) need only be touched upon here. Its presence in the warm Middle Aurignacian of northern Italy, with the spread of south Mediterranean heat-loving fauna across the Sicilian land bridges, shows that this is merely a temporary North Saharan "climatic visitor" of essentially non-European origin.

2. THE EMERGENCE OF THE MEDITERRANEANS

The bearers of *the Natufian culture* are coarse, primitive Mediterraneans with slight Negroid traits (evidenced by their alveolar prognathism). The older ones show Aurignacian echoes, while the younger ones merge into the modern, gracile Mediterranean type. And from this point onward, predominantly Mediterranean types are found from Kish (Mesopotamia) to Mohenjo-Daro (Punjab). However, they also appear in Egypt (Tasien, Merimdien) and North Africa in general, as well as in Spain (Mugem) and France (Téviec, Hoedic). This clearly indicates a *dispersal both into Western Europe and across the increasingly open and drained Iranian highlands*. Two new *lines of anthropodynamics*—namely, the North African and the South Himalayan—thus become discernible for the first time.

From North Africa, *Capsian influences* spread to Spain [*cf. K. J. Narr*, p. 506], and reached Germany and Great Britain (Long Barrows) along with the Western European Neolithic cultures. This Mediterranean current, driven by a superior culture, soon conquered Western and Southern Europe and *severed the continuity between the two Cro-Magnon wings*. In the east, however, it moves into the fertile Black Sea

region of southern Russia and, following the Vardar, Morava, and Danube rivers upstream, toward the Balkan countries (Bulgarian and Hungarian Early Mediterranean cultures).

North of them—who brought the first Neolithic agriculture to the Western Mediterranean—lay the distinct racial zone of the Late Mesolithic transcontinental Eurasian advanced hunter-gatherers. Here, the Mediterraneans mostly advanced peacefully into the ever-expanding northern territories (Tardenoisian, predominantly on sandy soils), which were traversed only by small hordes: *Intermingling, not displacement*, as can still be clearly seen today in India or Indochina. But slowly, and depending on the time and location, the process of mixing also began to take its toll; racial amalgamation and natural selection gave rise to *mixed groups and local variants*. From these emerged the foundations of today's European peoples.

The oldest actual Early Neolithic material from the fifth and fourth millennia BCE *around the Iranian highlands* is likely to be Mediterranean in origin throughout, at least in the broader sense of the term: Anau (South Turkestan), Nala (Baluchistan), Susa (Mesopotamia), then the Early Sumerians (Kish, Al Ubaid, and Ur in the 4th millennium BCE), and the Predynastic Egyptians (Tasien, Merimdien, and the Naqada culture)—and they are well documented in thousands of magnificent sculptures and portraits. They were also the *pioneers of agriculture and the first advanced civilizations*. However, researchers often make little or no distinction between "mother" and "daughter" cultures—that is, Mediterranean and Oriental—the latter of which is precisely what Egyptian artworks often depict, and in sites such as Anau and Tepe-Hissar, an Iranian influence is certainly a possibility. From *Lower Egypt*, they tenaciously advanced upstream along the Nile against the Ethiopids (Badâri) over the course of millennia. We can trace this here step by step, for no region on earth has yielded such magnificent series of skulls from all eras as the land of the pharaohs. Within their own country, they also almost completely drove back the Berberid pre-inhabitants over the course of the first ten or fifteen dynasties (up to their already historical Libyan advance) and proceeded westward along the coast against the Cromagnon-Berberids (Tebessa) and across to the *Iberian Peninsula* (Letreros, Mugem), the ancient trade route to the northern continent. However, this initially applies only to the fertile borderlands in the south and east. For on the barren and cold Carpetanian Meseta, Cro-Magnon echoes persisted for a long time alongside older cultures (Ticuso, and to some extent Solana).

In the eastern Mediterranean, Arcadian and Sicilian finds attest to this, but soon southern Russian finds (Mariupol) do as well. With Linear Pottery and the Lengyel-Tisza culture (of Near Eastern affinity), Mediterranean peoples seep into Central Europe. However, just as the older Linear Pottery culture disintegrates here under northern influences [see p. 125 ff.], so too does its racial Mediterranean character dissolve (Jordansmühl). In the east as well, it is only still evident in Central Russia in mixed forms (Ryazan type).

In the western Mediterranean region, somewhat stocky groups most closely related to the Natufian people (Mugem, etc.) are still pushing in from Spain toward France, where they become evident in the very short-statured Neolithic populations of *Baumes-Chaudes* and *Chamblandes*. To this day, they continue to live in all western and northern refuge areas (Cornwall, Wales, western Ireland, northern Scotland) *[cf. B. Lundman, p. 144]*, albeit linguistically overshadowed by the Celts, who were later likewise displaced from the fertile lowlands. At the dawn of the Metal Age, they continued to seep northward along Laplandic and Dalonic-Nordic routes as far as Scandinavia.

In the earliest times, probably as early as between the 7th and 4th centuries, the *linguistic branches* of 1. Proto-Hamitic (Proto-Mediterranean: West-Mediterranean) and Dravidian (Proto-Indian: Indic) and 2. Semitic (Proto-Arabic: Orientalic) and Japhetitic (Caucasian: Proto-European) also diverged. The *Aurignacian foundation* was still evident at that time in osteological primitivisms: Old Natufian, Mechta, Zizernakaberd, Murza Koba, Mugem, Mas d'Azil, Téviec. In both the Western and Eastern Mediterranean regions, they developed magnificent Early Metal Age *cultures* in the 2nd millennium: Tartessos or Tarschîsch in southern Spain, from which King Solomon obtained silver and tin; the Pillar Culture of *Malta*; and magnificent *ancient Crete* with its elegant, hyper-typical depictions of Mediterranean people (Knossos), which, extending onto the mainland, laid the foundations of pre-Indo-European Greece (Mycenae, "Pelasgians") in culture, religion, and language. *The Neolithic is the age of the Mediterraneans.*

But the subsequent eras pushed back the northern frontier everywhere. Only the half-millennium of *Roman rule* brought a brief resurgence. Legions and urban culture were established along the Danube, Rhine, and Thames, and in the course of fraternization, much blood was shed on both sides, only to be swiftly swept up by the great northern adversary and forced to flee into the mountainous regions: the Balkans, the Alps, the Eifel, and Wales (5th and 11th centuries). And thus concludes the magnificent mission of the Mediterraneans in Europe. More than a millennium later, however, their conquest of the South American continent begins.

3. MOUNTAIN BELT AND SHORT-HEADED RACES

Much more cautiously, gently, and later, the third route into Europe makes itself felt—the zone along the trans-European mountain forest barrier. Admittedly, a small Alpine settlement already appears in the *Ofnet Cave* near Nördlingen [*see H. Vallois, p. 108*], and of course the range of variation in Cro-Magnon and early Mediterranean skulls occasionally approaches so-called "short-headed" values. The large, coarse, even brutal broad-headed individuals with strong brow ridges of *the Borreby type* in Denmark must be regarded as Paleolithic-Aurignacian echoes—a late, residual fringe group of older and far more southerly influences, whose direct connections to the small, round, smooth "short-headed" types are highly unlikely.

Are the *Alpine types*, then, perhaps merely a variation of the Mediterranean types or of the Mediterranean-Nordic mixed belt? We must certainly always allow for the possibility of spontaneous local genetic changes. But their fundamentally different physique—with stockiness, a round head, and a round face—argues against this. They often virtually hide among the variants of neighboring races, only to reappear in distinct clusters in mountain forests, swamps, islands, and refuge areas. They are soon found in all graves and cultures and survive all invasions and shifts quietly and unobtrusively; indeed, during periods of calm, they numerically resurface in large numbers among the peoples.

They also appear as primitive beach-dwellers in connection with the subarctic *northern cultures* (Plau, Dömitz, Spandau), and here—in the ancient glacial valleys, on Danish and Dutch islands, and behind the western corner of Norway—they have survived to this day. In Central Europe, they were found primarily in the Western Alps (as an influx among the Northidic pile-dwellers of the Late Neolithic), among the Bell Beaker people (among their Dinarids), and settled predominantly in forested areas everywhere.

They migrated northward through the taiga forests and were pushed back and assimilated by Mongoloid, Nordic, and Eastern European peoples. These are the *Lapps or Sami, a marginal remnant of the ancient Europeans*. A few centuries ago, they (though this is disputed) still extended over the highlands as far as the Oslo area and undoubtedly deep into the Finnish Lake District; in the Middle Ages, they reached as far as northern Russia (Olonez). They were never adversaries, only fellow players. The theory that the Lapps originated in Northwest Asia—and, although dark-haired, still north of the blond types—has, for the time being, no other support than that it pushes them far away from Europe or Norway.

As for their spatial and temporal successors in the short-headed belt, the Dinarids [*cf. B. Lundman, p. 142*], there are likely only ecological connections (both are predominantly inhabitants of the forest belt). However, the Dinarids and *Armenids* are still difficult to distinguish at the beginning of their appearance and are usually grouped together even later by North American authors (Taurid type). In any case, this group of types first appears toward the end of the 3rd millennium BCE, that is, during the Bronze Age of the Near Eastern and Eastern Mediterranean advanced civilizations. The short-headed individuals found at that time in Cyprus and then Crete—which can also be historically classified as Sub-Aryan and Old Assyrian—and which soon spread around the Mediterranean and as far as Spain, were initially only medium-sized, hooked-nosed mesocephals, that is, more Armenid than Dinarid; indeed, it almost seems as if the Alpine-Armenid-Dinarid types had not yet fully differentiated everywhere. This was also the type of *the proto-Etruscans* who emigrated from Lydia (that is, the later Etruscan upper class, cf. the Genoese type of Columbus!), who were also found among the predominantly Mediterranean Phoenicians swarming into North Africa (Carthage from 814 BCE onward) and perhaps also laid the foundation for the *distinct Basque* type (which is attested from Almería and the Dolmen period around 2000 BCE). In the Balkans, where one might first expect to find Dinaric types (since the Western Balkans today constitute the core of this type), they have so far been documented only from the Early Copper Age around 2000 BCE in Bulgaria and, to some extent, in Ukraine, and much later in South Slavic regions (Glasinac). This could point to the Caucasus as their region of origin and a spread via the Steppe Route, just as the “Caucasian” local type indeed occupies a middle position between the Dinarids and the Armenids. In any case, they represent a very recent racial formation.

Their connection to the Stone-Bronze Age *Bell Beaker culture* is most evident. The center of that culture undoubtedly lies in Iberia—

Peninsula, specifically on the southern Andalusian coast. Only beyond an area of distribution dilution within Spain and France does the Bell Beaker culture reappear, this time clearly—and often almost exclusively—carried by typical full-Dinaric peoples: the Middle Rhine region, Bohemia-Silesia, Hungary, and finally, above all, central England (after 1800 BCE). But *how* exactly the Spanish Beaker culture and the Balkan core type came together (Adriatic colonies? Local parallel development?) to then spread, in the closest of collaborations, one of Europe's major typological elements remains a mystery. This conundrum is hardly resolved by the desperate move of classifying the Beaker people as merely dinariform but not Dinarid.

Of course, the Anatolian *Armenids* also do not become evident until later. Their area of differentiation is undoubtedly the peripheral Anatolian mountainous regions. The Mesopotamian-Asia Minor Chalcolithic period first reveals their short, steep-angled skulls (sculptures from Tell Halaf, locally typical rounded skulls from Alishar Hüyük), as do later examples among the Hittites and Mitanni (whose upper class was proto-Nordic, p. 126). In the earliest Sumer, they are represented as a minority, overshadowed by Mediterranean peoples; they appear in the 4th and 3rd millennia, culminating in the lifelike statues of the city-kings of Lagash and Ur. Semitic Assyria (from about 2400 to 331), the northern Mesopotamian buffer state against the northern peoples and an offshoot of Semitic Akkad (before 2300 BCE), displays their skulls alongside those of the Orientalids.

At the interface between the Armenian highlands and the Oriental-Mediterranean lowland plateau, the Assyrian, *"Jewish" contact type* of the Canaanites (Amurru-Ammonites) emerges, Hittites, and Assyrians—a type depicted in countless ancient monuments and which spread from here with the trade-oriented Jewish people to Egypt, Arabia, and Abyssinia; with the Phoenicians throughout the Mediterranean; to Central Europe during the Roman era; and, in the Middle Ages, as far as Eastern Europe. The Armenians, who were likewise highly skilled in trade, spread it far across the Near East. In every case, these were predominantly peaceful, migratory traders.

In *Judaism*, the second Semitic—that is, Canaanite—migration around 2000 BCE significantly strengthened the Oriental influence (see p. 130). In the Phoenician Mediterranean, the Hellenistic East, and the Roman Empire, Jewish merchants were already present at all major trade hubs as early as the pre-Christian era. This unique and worldwide dispersion was significantly intensified after the destruction of Jerusalem in 70 CE, particularly in Asia Minor, the Crimea (with its Judaized Khazar nobility), Spain, and the Rhône and Rhine valleys (Cologne, then Mainz, Worms, and Speyer; much later, Frankfurt). Expulsions from the Rhineland after 1096 led to the emergence of Eastern European Jews (Ashkenazim: Yiddish), while the French expulsion of 1394 and, especially, the Spanish expulsion of 1492 led to the emergence of Levantine Jews (Sephardim: Old Spanish). The Islamic-Arab expulsion of the 7th century strengthened the Abyssinian Jewish community (remnants: Falasha), which had already been substantial in the first centuries AD; however, the Abyssinian Jews, like the Hellenistic-Chinese and Phoenician-Berber-

and Babylonian-Malabar Jews have, typologically speaking, almost completely assimilated into their surroundings. The Mosaic Khazars and Karaites were, for the most part, merely Mongoloid converts. But with the European expulsions, particularly in the 19th century, strong new Jewish colonies emerged, especially in South Africa and America, and the 20th century brought the establishment of a state and reunification in Israel.

The ancient Oriental-Armenian contact zone continues in a moderately modified form far across all of Iran: medium-statured, hooked-nosed, but *long-headed*, slender people who are not without reason classified as *a* distinct *Iranian subrace* of the Orientalids (Afghanids). North of them, however, the short-headed belt sweeps across the Iranian peripheral mountain ranges into the vast mountainous world of the Hindu Kush, from where it also penetrated the Turanian lowlands during the postglacial period: *the Turanids*. Subsequent aridification and Mongoloid invasions largely drove them out of this region again.

4. THE BLONDE NORTH

The situation is quite different, however, when we now turn once more to prehistoric times and the influx of recent forms from the east and through the third *gateway* —the *Caspian Gate* and Ukraine. During the last ice ages, southern Siberia was encased by ice and mountains and separated from the *eastern part* of the Eurasian supercontinent by the oblique Asian mountain range. *The major racial groups had been able to develop undisturbed.* Then the postglacial meltwaters and firn fields receded, passable steppes extended into peripheral Europe—which had been virtually cut off until then—and the vast and fertile *"Siberian pocket"* opened its loess and black earth chambers toward the west.

The new eastern form is the Upper Paleolithic modern human of the *Northern Aurignacian* type (Brno, Předmost, Combe Capelle; see p. 119). He brought an end to the Neanderthal Mousterian culture with a sudden rupture and collapse, ushering in the Aurignacian *steppe knife culture*. This culture spread from Siberia to France (Combe Capelle). Aurignacian echoes are evident among the microlithic people along the Volga (Drevne Yamnaya). Let us never forget: *Biologically speaking, Europe begins at the Altai, not the Urals;* Old Europe, biologically speaking, is *the end and the periphery*, a refuge, a remnant, where cultural forms persisted later and longer—well into the beginning of our era—than in the Mediterranean, the Orient, and Southern Siberia. Failure to take these cardinal factors into account has led to unnatural conceptions of proto-European cultural and human centers. One

cannot pursue biohistory without taking biological and historical factors into account *equally* and *comprehensively*.

New territory is expanding ever more rapidly northward; flora, fauna, and humans follow. The northern Aurignacian forms give rise here to the proto-Nordic type: *transitional stages* are represented by the hunters of Stangenäs (Maglemosia), the Oban and MacArthur Caves, Pritzerbersee, and Ellerbeck (Ertebölle culture) [*cf. J. G. D. Clark, p. 322*]. From the latter, a direct morphological line of development leads to the Corded Ware people, the Hallstatt people, and the Germanic row-grave types, and ultimately to *the* Nordic *race* [*cf. B. Lundman, pp. 141 ff.*]. Their (concentrated) blondness arose in the low-light tundra belt north of the Ice Age forests and as an expression of the mutational capacity of the Europid group, whose glacial relics can still be found today in the highlands from Morocco to Turkestan [*see S. Alcobé, p. 176*]. "Swedish mists" were not necessary for this, nor even Siberian ones; such mists neither existed nor exist for North African and Inner Asian blondes any more than for the numerous other depigmented mammals of the subarctic zone. This applies to both Cro-Magnons and Aurignacians.

Thus, it is understandable that all Siberian finds show progressively Europid types extending into the second millennium B.C., where they are still found in the kurgans of the Andronovo culture near Minusinsk. This magnificent Bronze Age culture, whose countless burial mounds (kurgans) have not yet been completely emptied even after centuries of systematic looting, is also the creator of that *animal-motif woven art*, which not only exerted a powerful influence on northern China but would also live on in Germanic brooches, our Romanesque capitals, and Byzantine and Irish initials. These people were *blond*: the Chinese annals attest to this. Their skulls resemble those *of the Nordic peoples of the Ukrainian Kurgan culture*, the successor to the Russian Ochre Grave and Fatyanovo cultures (Yaroslav), which in turn led to European corded ware (see below). The Nordic connections are thus quite clear.

In Chinese history, these people are called the Yüäschi and Wusun, from whom the blond Tocharians (Turkestan East Indo-Europeans: medieval paintings of blond men in Turfan) are descended. In European history , they are called *the Scythians; their eastern wing consisted of the Massagetae and Sarmatians, and their western wing of the Scythians*, whose blondness is attested to, among other sources, by the accounts of Herodotus. The Massagetae also belong to this group; they are the ancestors of *the* blond *Alans* and their modern-day remnant in the Caucasus, the Ossetians (more correctly, the Ossians).

In Europe, toward the end of the Neolithic period and quite suddenly, the warlike, combative group related to the northern Russian Fatyano-vo culture appeared—

of *the Corded Ware culture* —related to the northern Russian Fatyanovo culture—appeared quite suddenly between the Caspian Sea and the North Sea, concentrated in central Germany, and then pushed northward into the megalithic regions of northwestern Germany and southern Sweden. Skull remains have been preserved in abundance. There can be no doubt that these were *Northern Indo-Europeans*. But who were their western adversaries, the non-Indo-European megalithic builders?

The *megalithic problem* would be easily solved if "megalith" were synonymous with "Cromagnon." For stone pillars (menhirs), dolmens, stone circles (cromlechs) such as Stonehenge, and stone alignments such as those at Locmariaquer—associated with sun worship and ancestor veneration—are found throughout nearly the entire Cro-Magnon region (since around 3000 BCE), but also far beyond, from North Africa and Egypt to India and China, as well as in Spain and England, although North Africa appears to date back to the Bronze Age, while Northwest Europe seems older and more dominant. Their prevalence near the coast is evident. However, the burial finds consist predominantly of large Mediterranean (longbarrows, see p. 121) or Nordic and Cro-Magnon types. Thus, the megaliths as a whole appear to represent an *interracial cultural phenomenon*.

One after another, the north is thus populated by the Lappids, Cro-Magnons, pre-Indo-European peoples, and now also Indo-European Northerners. Land use and settlement density have now reached their temporary peak, and the far north reacts most sensitively to any change in economic conditions. And this change comes in the form of a sharp climatic collapse amid the constant fluctuations of the postglacial retreat. Thus, an extraordinary event occurs, one that sets in motion dynamic processes of world-historical significance. *The pull ceases; the ebb begins.* At first, it pushes only gently and slowly from the north; hordes surge and press forward, seeping southward; entire tribes break away and follow, forcing their way through, finally shattering and breaking down all obstacles, and flooding southward in broad waves, millennium after millennium. *Thus arises the Scandinavian center of movement for the Northern type.*

Wave after wave is set in motion from here, until finally the Germanic peoples themselves begin to advance—slowly at first, then more rapidly: first seeping in as young men, and finally as migrating tribes of a land-seeking peasant people.

With the incursion of the Huns from the older and stronger Mongoloid center of movement in the east, northern and eastern lines of movement converge, and toward the end of the 4th century CE, the maelstrom of *the* Scandinavian *Migration* emerges. The *East Germanic peoples* turned westward in search of land. All were originally or predominantly of Scandinavian origin, and all carried the Nordic type southward (row graves, etc.). It was now that the definitive typological foundations of the later peoples were laid, even as the birth rate advantage of the more sedentary races and man-

the disruptive incursion will continue to shape and refine them. Since 800, this has also included the *Vikings* from the Danish-Nordic primordial disturbance zone, who burned Hamburg, Paris, and London, plundered Leuven and Haithabu, and discovered and colonized Iceland, then North America (around 1000 to 1400). As soon as these savage sea raiders began to found states as civilized Normans, they also exerted a typological influence: in northern France in 897, Sicily in 1020, and Asia Minor as well, but above all in England in 1066, from where the Nordids made the leap to North America in 1620, opening up a new world—indeed, preparing the way for the "younger world" that would replace Europe in the 20th century. As the Rus, they gave Russia—from Novgorod to Kyiv—its name and form of government. The nobility of all of Europe, from Novgorod to Toledo, is now essentially Nordic, sharing the same Indo-European equestrian-chivalric tradition and discipline, and is therefore *international*. With the decline of the empire that spanned from Charlemagne to Charles V, one of Europe's great intellectual and moral pillars crumbles, and *nationalist* sub-entities with distinct linguistic characteristics rise to prominence, culminating in the century following the Great Revolution.

5. THE FORGOTTEN EAST

The "Siberian pocket" is vast, larger than Europe. Beyond proto-Nordic Southern Siberia, the open landscapes stretch all the way up to the Yenisei; to the north, the taiga belt extends from continent to continent. No one would assume that this vast habitable space remained empty during the postglacial period of differentiation among hominid varieties. Rather, during the Neolithic period, this region was home to the transcontinental belt of *the Comb Ceramic culture*, with whose cis-Ural *western segment* the blond West Ugric Eastern Europeans entered prehistory.

Thus, their *trans-Uralic* portion remains the domain of the more primitive, hunter-gatherer East Ugric *Siberians*—the later *"melting pot of all races"*—crowded out, hounded, and hybridized by everything that pushed northward as the forests cleared. These were primarily the Andronovo people, who followed the expanding steppe from the west, and much later the Tungusic wing of the Mongoloids. The latter eventually drove *both groups* out, along with the bearded Ainu, who held the mountain forests of the far north. Place and river names in Central Siberia still recall their original homeland. Their only escape from this pressure cooker—from the steppe and its inhabitants—lay to the east through the Baikal gateway into the ancient trade route of the Amur. This route led them, *the most severely displaced of the Europids*, to Sakhalin and as far as southern Hondo (Jomon matted pottery). They had taken possession of all the islands and were only gradually pushed back by the Yámato of Kyushu (later the Japanese; see p. 162), shattered as a nation in the 9th century, and finally driven out of Hondo in the 18th century.

In the west of the Trans-Eurasian belt, however, the steppe—along with Nordic hominids—is pushing into Western Europe, and likewise into Nor-

(Andronovo skulls and Nordic skulls of the Ananino culture) among and eventually over the East-Europid Comb Ceramic people. In the west, close to the front lines, these very primitive East-Europid Comb Ceramic people exchanged their Finno-Ugric language for that of the conquerors: Indo-European Slavic.

Thus, the skulls of the Proto-Slavs in the upper class are clearly Nordic (Poland), while those of the lower class are Eastern European. Only in the northwest did the incursion achieve success— if not linguistically, then at least racially: the predominantly Nordic Finns of Finland and northern Russia. They, in turn, pushed the Finnicized Lapps into the subarctic wastelands.

Only very late, as the final Europid expansion, did the Slavic expansion in the Middle Ages—and in the full light of history—carry the *East-Europid type northeastward* as well: in the 9th century, Novgorod was founded in the midst of the Finno-Nordic Finns (whose modern-day remnants include the Karelians, Mordvins, Votyaks, and Cheremis). As late as the 11th century, skulls from Moscow were still of the Fennic-Nordic type, and it was not until the 17th century, following the collapse of Tatar rule, that Dinaro-Nordic Ukraine also became more heavily intermixed with Eastern European features (Cossacks).

However, even as early as the Corded Ware and Linear Pottery periods, isolated East-Europoid individuals were not entirely absent from Nordic East Germany, Alpine Hungary, and the Dinaric Balkans (Groß-Tschernosek in the Schl., Langenlois, Kyiv, Alföld). But it was not until the Migration Period in the 5th century, when eastern Germany and Poland were largely depopulated, that *the departure of the Nordid population* was followed by a further influx of Eastern Europeans, which is already historically evident as far west as these regions. From the 9th century onward, now in the full light of history, this advance—which had become forceful due to *a birth rate advantage* —was halted (Limes sorabicus), and in the 12th century, the German return migration began (remnants of the Wends).

However, the advance of the Cossack Yermak *into Siberia* opened up to the Eastern Europeans, beginning in 1582, the vast Central Siberian region—swept clean by the Mongols—which was as large as Europe itself.

6. THE ORIENTAL-BERBER PRESSURE BELT

The northern pressure belt of the Eurasian steppe corridor—stretching from the Yenisei to the Vistula and merging with the barren region of the northern center of unrest—is matched by a southern pressure belt formed by the *Afro-Asian desert chain*, extending from the Sahara to Central Asia, with its Near Eastern focal point on the *Arabian Peninsula* and the Orientalid center of unrest.

Arabia is as large as Western Europe and, in contrast to the latter, was a flourishing region during the Ice Age, separated from inhabited Turan by the Anatolo-Iranian frost wall. In its temperate north, the first modern hominids with typical Mediterranean features became evident, and it was not until the late postglacial period, following the advance into

the highlands of Arabia and Iran that *the Orientalid variant* —a hybrid between the Mediterraneanid (long-headed, straight-nosed) and the Armenid (short-headed, large-nosed) types—emerged (long-headed, arched-nosed, and almond-eyed). To the south lay the Weddids and Negrids. But just as the Indo-Pacific arc of southern humanity was pushed westward (toward Africa) and eastward (toward India and Melanesia) and fragmented within the expanse of the Afro-Asian arid zone, so too were the ancient Mediterraneans pushed *westward* in the north as the Gracial Mediterraneans and Atlantids, and *eastward* as the Indids and Weddids. The westward movement encountered the Berberids, the southern wing of the Cro-Magnons who had migrated toward Europe [*cf. S. Alcobé, p. 176*]. *The eastward movement, however, gave rise* to *the Orientalids in the Arab-Iranian highlands*, who in turn disrupted the Mediterranean-Indid continuity.

The Orientalids are thus a proto-Mediterranean specialization; Orientalid and Mediterranean skulls (nose!) are just as difficult to distinguish as Nordic and Mediterranean ones (crown height!). It was only after the Orientalid Semitic had separated from the Mediterranean Hamitic that they became discernible both prehistorically and historically: the Chalcolithic Megiddo (Palestine) reveals long-headed, hooked-nosed, graceful Orientalids, and the Semite Sargon conquered the Sumerian Akkad in Mesopotamia. Further advances inevitably followed—the unrest in the surrounding rich cultural regions of Egypt, Syria, and Mesopotamia never ceased. And at the same time, these regions continued to dry out: most of the once-populous cultural centers of the Ancient Near East now lie as mounds of rubble in a deserted, arid steppe. Every drought and every crack in the power structure allows the desert to spread. *Here, therefore, lies the southern center of unrest for the Europids.* Since the Early Neolithic, it has been driving the younger waves of peoples along the same natural paths as the older racial waves: *the Semitic-Orientalization of Egypt* in the west, and *the Oriental-Islamization* in the east. Even in fully recorded historical times, water spray still crossed the barren lands, forcing its way along the northern and southern edges of the Sahara, along the East African coast, and eastward to Persia, India, and even Indonesia.

Later, the Moabites, Ammonites, Edomites, and others arrived—and, above all, following them, the Khabiri (Hebrews)—into the Aramean peripheral zone of the Jewish or Assyrian type, within the area of the North-Oriental contact arc stretching from Jerusalem to Mosul. The resulting ethnic group of the Jewish tribes—a mixture of Oriental, Armenian, and Mediterranean elements—lived in considerable numbers in Mesopotamia after the Babylonian Captivity and spread from there to Persia and India (Cochin),

but above all, after the birth of Christ, from Judea across the entire world (cf. Armenide, p. 124).

With the Islamic wave of Orientalids, the Persian Orientalids were reinforced as they *moved eastward* and later reached India as well (Ghor 1175, Mughal Empire 1526); apart from considerable exclaves in southern India (Hyderabad, Mysore, Malabar Moplas), present-day Pakistan is a visible manifestation of this. *Toward the west*, *North Africa* came under increasing influence, as did Ancient Ethiopia. Since the early days of Islam, *East Africa* has been increasingly permeated by Arab trading colonies (Zanzibar, Madagascar). From South Arabia, however, a more recent, significant wave of emigration and return migration followed the Islamic conquest of Indonesia to Batavia, Colombo, Singapore, etc. Note how the dispersal of the Orientalids strictly adheres to the major, i.e., transportation-friendly, dynamic routes.

In contrast to these movements, Iranian-Oriental *Iran* appears as a flooded region and Berber *Northwest Africa* as a calm, flood-swept area. Indeed, the Berbers—descendants of the proto-Berbers, roughly Cro-Magnon-like "Mechtarasse" from their Saharan homeland—as Libyan rulers and frequently as mercenaries in Egyptian history; they likely also pushed back the entire northern Saharan front of the Ethiopids and made incursions into the Canary Islands (Guanches) and the European mainland (Western Andalusia), yet their success was relatively limited. Rather, the progressive desertification plunged Libyan culture and way of life into the gravest distress—the Garamantes hauled soil to the fields in baskets (Herodotus). But when, in the 4th century B.C., the advent of the camel set the desert in motion in a truly revolutionary way and the vast distances were reduced, the Numidian-Christian *Tuareg dynasty* (Imoshag) broke through the Tuareg vassals (Imraden) of Ahaggar and Tassili (tomb and remains of Queen Tin Hinan, ca. 400 CE), and both pushed as far as the Adrar and Aïr. Later waves reached Sudan in the south (Songhai, Lemta, and Saghawa in the 6th century) and Morocco in the west (Merinids of Fez, Almoravids of Granada). Yet both of these offshoots were absorbed into the Mediterranean and Sudanic masses, respectively. The entire Atlas mountain range, however , remained the great Berber stronghold, which, in the western High Atlas, retained its political independence to a large extent even against Moroccan sultans and French regiments.

India is a dead end between mountains and the ocean. Indeed, even as the tropical climate belts retreated, a significant portion of southern humanity, trapped beneath the Himalayan barrier, found no way out to the west or east. Thus, the two contact forms of the Melanids (counterpart of the Ethiopids) and the Malids (counterpart of the Khoisanids) were pushed into the southernmost south, beyond the Deccan landmass. This severed the continuity of the dark-skinned forms.

In the South Arabian forests, the southern forest form of the Weddids had specialized as a more infantile and primitive counterpart to the related Mediterraneans to the north (remnants in Hadramaut) and, together with the Mediterranean base form and the development of the Orientalids and Indids, pushed through the southern fringe forests toward India via Iran (remnants in southern Persia). Thus, even at the time of the Aryan invasions, essentially only the Punjab and the Western Doab were under the control of the Indids, who practiced hoe farming, while the vast *forested Deccan*—the heart of India—remained in the possession of the Weddid hunters. *The racial history of India is therefore first and foremost the history of the Indids' agricultural displacement of the Weddid hunter-gatherers living in the forests.*

Gradually, the hunter-gatherer way of life retreated both southward (toward the Western Weddides or "Prädrawidians") and eastward (toward the Eastern Weddides or "Proto-Malays"), in both cases against the southern human inhabitants who had previously occupied the land. Thus, *Siam and Cambodia* (the advanced civilization of the Khmer Empire with the magnificent Angkor from 877 to 1450) became the main domain of the Eastern Weddids, followed by Malaya (Senoirest), Java, Celebes, etc., where they still predominate today, particularly in remote areas, but have long since been drawn into the orbit of neighboring advanced civilizations and linguistically Malayized. The Palæ-Mongoloid influence is considerable everywhere.

Meanwhile, millennia of turbulent racial history among *the Indoids* had unfolded. Even the palace-rich metropolises of *Mohenjo-daro* and Harappa on the Indus (3rd to 2nd millennium)—now arid land, but once densely forested—reveal Indoid and Vedic types in skeletal remains and sculpture. These *matrilineal Dravidian agricultural cultures of the Indians* pressed downstream along the Ganges like bulging, explosive cells, but above all via the Yamuna and Tapti rivers onto the Deccan Plateau. The west-to-east slope of this region inevitably channeled the pressure into the valleys all oriented eastward (Godavari system, Mahānadi) and brought the vast, arable central basins—and then also, through a narrow entrance with springs on both sides, the central east coast (Dravidian, Indid Telugu)—under Indid control.

The "Aryanization" of the North (Vedic traditions)—supported only by a thin and rapidly dissipating upper layer, or in some cases led solely by Mitannian conquerors—provided a renewed impetus whose effects can be traced step by step throughout early and high history, and even today, most impressively, throughout the jungle regions of inner India. In the north, this took the form *of a displacement of the Proto-Melanides* (Doab: the lower the caste, the darker the skin) or their marginalization (Northern Mundari peoples such as the Santal and Ho); further south, it took the form *of a displacement of the Deccanic Weddides* (Deccan: the lower the caste, the broader the nose) or their marginalization (Gond, Baiga, Kui, Mardia).

Behind these major movements, which were always directed southeastward, the "Aryans" were historically followed by more or less discernible, stronger Turanid waves reaching the west coast (the West-Brachid type or "Scythodrawidians": the Marathas), various Scythian waves seeping into the northwest (Rajputana), and finally, ever-swellings of Orientalid waves. They spur on the Indic impulse. This leads to the expedition of the Kathiawarian adventurer-prince Vijaya against the Vedic *West Ceylon*; during the heyday of the Maurya and Pallava dynasties, across the sea to *Burma and Java* (Hindu kingdom: Srivijaya); and from there—now significant only in cultural terms—into the Khmer Empire. In more recent times, the population surplus has been directed primarily toward South Africa and Malaya.

The correction of an old and often disastrous error cannot be overlooked here: *there is a Dravidian language group, but no "Dravidian race."* For as Sanskrit, and later Prakrit, of the Indo-European upper class (Aryans in the northwest) displaced the Dravidian languages (the remnants of which are the Brahui in Baluchistan) of the indigenous Indians (Nagas) as well as the Weddids (Dasa), and eventually pushed it entirely onto the southern Gondo-Malid Weddids and the farming Black Melanids in the southern tip, the proto-Dravidian Indians of today were for the most part "Aryanized," while the Weddids and Melanids were for the most part "Dravidized."

8. THE CONQUEST OF THE SOUTH PACIFIC

To earlier researchers, the *origin of the Polynesians*—a distant and noticeably Palæ-Mongolized branch of the brown southern belt of the Europids, the majority of whom had evidently penetrated the vast island expanses of the Pacific Ocean only late, likely not until around the turn of the era—must have seemed a mystery. Where was "Hawaiki," their legendary ancestral homeland? How had they arrived, via the "golden path of the Tana" (the rising sun), in the vastest region on Earth, which is still today inhabited by a single, highly distinct hominid type?

This variety exhibits, above all, Indoid, then Turanid, and Palæomongolid traits, all of which, however, appear to have been fused into a cohesive, harmonized type. In northern India, which was increasingly affected by postglacial aridification (the Thar Desert instead of the forests of Mohenjo-daro!)

Much is suggested by the traditions, by certain early historical Indonesian archaeological finds, and by a great deal in the agrarian-matriarchal culture, social order, and customs, in which early Oriental and ancient Indo-European concepts intermingle and fair-haired gods and ancestors play a significant role. Added to this are certain Sumerian and ancient Dravidian word parallels, shared myths, and the partial correspondence between the known Easter Island script and the characters of ancient North Indian Mohenjo-daro. Thus, northwestern India may indeed have been the region of origin. From here, castle-building sea kings (Cyclopean structures) and astronomers—who soon began crafting bamboo maps—set out before the turn of the era as seafarers equipped with hieroglyphic writing and worshiping gods that were unquestionably both Aryan and Oriental, to conquer the island world via Indonesia, which was either uninhabited or inhabited by Melanesians. From here, they brought with them the Neolithic achievements of agriculture and social stratification that would eventually reach the west coast of the Americas. Along the way, contact with Paleomongoloids in the north (Micronesia) and with Melanesians in the east (Fiji, New Zealand) was inevitable.

In incredibly daring transoceanic expeditions, they reached Samoa, later Hawaii and the Marquesas (around 600 CE), and finally Easter Island and even the South American coast, conquering Fiji and, around 1300, New Zealand as well; indeed, Antarctica was reached as early as 600 by Admiral Te-Aru-Tanga-Nu and around 900 by Ui-Te-Rangi-Ora. It was one great epic of heroism. The heyday spanned from 600 to 1300; since the 16th century, the nobility, the Arioi, have fallen into decline and extinction, and since the 18th century, alcohol, syphilis, and the profound despair following the arrival of the Europeans have taken a terrible toll. Today, things are slowly looking up again.

THE PEOPLE OF EUROPE TODAY

BY BERTIL LUNDMAN

Although, geographically speaking, Europe comprises only the western peninsula of the vast Eurasian landmass, in purely numerical terms it is home to by far the largest portion of the so-called white racial group, the Europids, and is therefore of considerable *anthropological* significance. In addition, it ranks among the most thoroughly studied regions of the world in terms of typology—albeit only in recent decades. The totality of the Europid races, however, extends far beyond geographical Europe. For *biological Europe*—that is, the isolated regions of the West Eurasian biota, including the Europids—extends eastward to the Altai mountain range and southward to the dividing barrier of the Sahara's arid regions. Thus, Europid racial elements still dominate a broad southern belt outside Europe, stretching from North Africa through the Near East to northern India, and in some cases even as far as the Indian subcontinent and the Pacific.

East of the broad transitional zone of Siberia—which is interspersed in a mosaic-like pattern with elements of the European race—that is, east of the trans-Asian barrier, lies the domain of exclusively Mongoloid races. The boundary of distinctly European racial elements lies in the Eastern European forest belt between the still predominantly European Volga Finns and the predominantly Mongoloid Voguls and Eastern Yakuts. With the Samoyeds high in the north on the Arctic Ocean, there is even a purely Mongoloid enclave. In Europe proper, however, such Mongoloid enclaves are rare, occurring only to a limited extent in the Hungarian Puszta and in a few southern Russian pockets.

South of the Sahara, in turn, lies the contiguous territory of the Negroid groups. But even here there are interminglings, for through the transitional type of the Ethiopids of the Central Sahara and the East African Horn, Negroid or at least Negroid elements have also penetrated the Egyptian population and, in earlier times, even reached what is strictly European territory. In general, however, the types here in the south are much more clearly separated than in the eastern part of the Europid regions.

It should be briefly noted, however, that Europid elements have also penetrated far into the habitats of the two neighboring major groups. In the east, these primarily include the Europid influences in western and northern China, the aforementioned Indo-Oceanic groups, and the ancient Europid enclave of the Ainu of Sakhalin and Yezo. In the south, however, one should mention the Berberid incursions into the Sahara and those Europid elements that were carried southward along the ancient East African "highway of peoples."

The most striking *difference* between the Europoid or "white" racial group we are discussing here and the Mongoloid, "yellow," or Negroid, "black," racial group lies, of course, in—

in their more or less light-colored skin, followed by differences in proportions and the manifold individual features of the more sculpted faces of the Europids. However, this skin of the Europids, which is in itself more or less light-colored, also varies in shade from a luminous pinkish-white to a fairly deep dark brown, and this is particularly evident in connection with the increasingly southern locations of the individual Europid races. Thus, the darkest shades are also found among the varieties—which are still typically Europoid but no longer European—of the aforementioned southern brown racial belt stretching from North Africa to the Pacific. The eyes of the white race also exhibit a greater or lesser lack of pigment. In the northwest and in large parts of Central Europe in particular, gray and blue hues predominate, although they are almost always accompanied by ring- or spot-shaped accumulations of yellowish pigment that are barely noticeable to the naked eye. Further south, eyes become progressively darker on average, so that most people around the Mediterranean have brown eyes. However, their shade is only very rarely as dark a brownish-black as that found among most non-European groups.

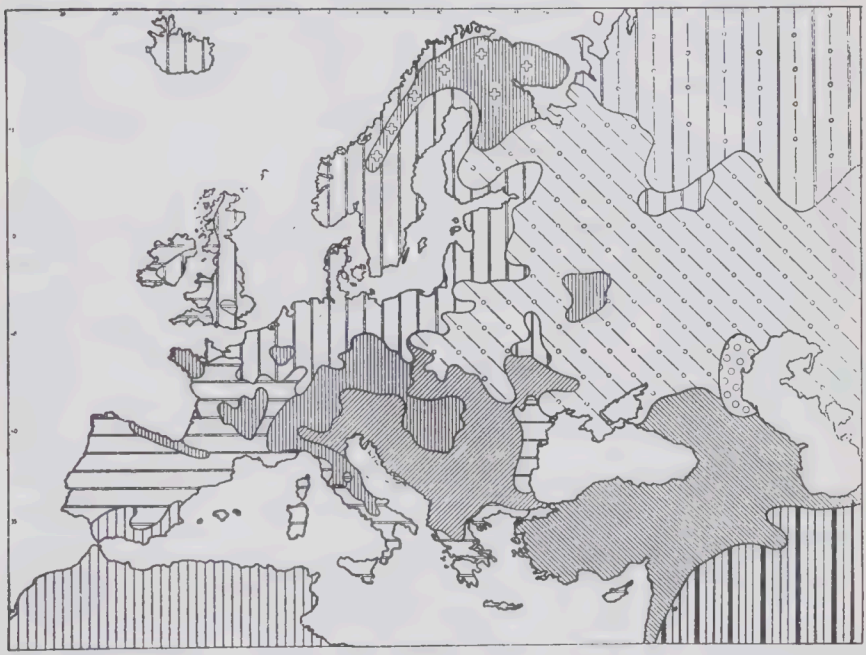
Similar patterns are also observed with regard to hair color, although truly light colors are more common—even when examined under raking light—only in parts of Scandinavia and the Baltic states. In most of Europe, hair color is usually dark brown. However, when viewed under raking light, it becomes apparent—in contrast to most non-European groups—that even here the pigmentation is far from saturated.

Its biological significance warrants a few further remarks, beginning with *the skin*. For prehistoric humans—who, while typically hominid-like and virtually hairless, were still inadequately protected by clothing—the skin constituted a particularly sensitive, indeed vulnerable, part of the body. The skin color of early European humans likely originally resembled that of today's darkest Europoids, for it was only the post-glacial cultural upsurge that allowed the original southern forms to penetrate even into the northern zones with a harsher climate. Thus, the Europid group likely only gradually lightened in skin color as it advanced northward. This would imply a mutational and selective adaptation to a low-light, cold, and damp climate.

In fact, we now know that one of the most important functions of the skin is to regulate the passage of ultraviolet rays from the sun to the deeper tissues. Too little

exposure can therefore cause deficiency diseases such as rickets, while moderate exposure increases vitality and kills harmful germs. Excessive exposure, on the other hand, causes damage, weakens the body's resistance, and results in so-called sunburn, which impairs or even partially destroys the cells of the subcutaneous tissue. Thus, we can assume with a high degree of certainty that the most depigmented European races first emerged in the cold, humid northwestern part of the continent. In contrast, further east of the Baltic Shield, the climate in all relevant

PREDOMINANT HUMAN RACIAL TYPES IN EUROPE



Periods may have been too sunny, that is, too rich in ultraviolet rays. For this reason, subarctic and alpine regions, with their intense summer sunlight or its reflection, are also unsuitable for people with light skin; modern polar expeditions do not take blond people along. An increase in pigmentation can also be observed north of a line roughly connecting Moscow, Reval, Stockholm, and Trondheim, as well as in many higher-altitude regions of the Alps. This is clearly true even in areas where—unlike in much of northern Russia—there have been no late and secondary migrations of eastern, predominantly Mongoloid groups, who are better adapted to these regions both physically and culturally. The dark-skinned Southern Lapps are also undoubtedly of Old European origin and have a very long history in their current, high-altitude, and northern territories.

Just as the dark color of the skin serves as protection against excessive solar radiation, so too does the color of *the iris*. This, however, appears—as far as can be judged at present—to be of less significance for hair color. The latter is also correlated with skin color to a lesser extent than is the case with iris color.

The variation in other striking racial characteristics, such as height, nose shape, cephalic index, etc., never exhibits the same striking regional patterns as coloration. A map of the distribution of *height* in Europe, for example, proves to be extremely varied. Currently, the tallest individuals are found in northwestern Europe, from Estonia to Scotland, and in the western part of the Balkan Peninsula. However, nearly all of Ukraine also falls close to these values. Conversely, the Lapps are the shortest, with group averages for men as low as 155 cm. Over the last hundred years, body height in countries with a higher level of civilization has also shown an increase that is likely only phenotypic but nonetheless very significant.

Such differences in height likely played a role as indicators of physical strength, as well as in the distribution of races during the struggle for existence in earlier times, when differences in civilization were less pronounced, since shorter tribes were at a disadvantage compared to taller ones and could be driven back into inhospitable regions. This was quite clearly the case with the Sami.

Turning to *the head shape* of the Europids, it becomes apparent that there are very large differences here, particularly in the length-to-width index. Long heads are found primarily in the northwest, where local averages in Sweden reach as low as 73, and also in the southwest, in the Mediterranean region. Short heads, however, occur across a broad zone through

Central Europe—from the countries bordering the Bay of Biscay through the French Central Plateau (where the European maximum is presumably found, with a local average index exceeding 90 in some places!) to the Western Alps—and continuing through northern Italy to South Slavic regions and Hungary, and then northward across the Western Carpathians to Silesia and southern Poland. Further east, the short-headedness in Russia is somewhat less pronounced; indeed, it decreases here and there —for example, along the Don River and among the Volga Finns—to the point of average head shape. In contrast, most Lapps are very short-headed, and in the eastern parts of the Balkans, we find a fairly isolated long-headed region.

In general, the short-headedness of the local population in large parts of Europe now seems to be declining somewhat (as in Switzerland, Norway, etc.), whereas in the early modern period and the Middle Ages, a more or less pronounced shift in the opposite direction took place almost everywhere. In Central Europe, this shift was at times downright rapid.

It is unthinkable, however, that living conditions alone could provide a sufficient explanation. Genetic changes must have set in during this period, partly in conjunction with a reshuffling (through natural selection) of the population's gene pool—in both cases for reasons largely unknown to us. The changes, however, appear to have been oriented toward a more late-maturing and undemanding type of predominantly Alpine race, which had relatively better chances of reproduction and survival during times of war and hardship compared to the more demanding and early-maturing types.

Two additional racial characteristics are of great importance for unraveling the movements and mixtures of the races, since, as far as we can see, they are completely independent of the environment and show almost no genetic changes even in historical times. The first is the *ratio of the height to the length of the cranium* (which cannot be measured in living individuals!). As heads—or rather, skulls—became generally shorter and broader in the Middle Ages, the height also decreased somewhat, so that their ratio to length remained almost unchanged. Thus, a mapping exercise reveals how remarkably consistent the zoning of the skull's height-to-length ratio has remained from the Stone Age to modern times.

Consequently, the boundary between the low-harmful West—from northern Norway to northern Portugal—and the high-harmful interior has generally remained quite sharp up to the present day. The boundary is even sharper in the southeast, where it meets the Mongoloid, low-harmful regions of northern and central Asia. Small, low-harmful enclaves in the Magyar-

Puszta and among the Székelys of Transylvania point to stronger Mongoloid influences, as does the distribution area of the Eastern Lapps. The continuous high-harmfulness of southern Russia, on the other hand, shows that relatively little Mongoloid blood has seeped in there. A high-harmfulness region in North Africa extends across a large part of the Iberian Peninsula.

The distribution of human *blood groups* and that of their blood genes (gene = unit of heredity) is certainly very ancient, since the mutation rate for these genes is nearly zero. Unfortunately, we can observe these patterns almost exclusively in living humans. For example, there is an almost complete similarity in the patterns among North Indian peoples and Gypsies, and a great similarity in the "Mongoloid" blood profile of the Magyar Puszta and among the Eastern Lapps. Maps of such gene frequencies are particularly important because they are the only ones that *directly* reveal genetic differences.

In Europe, the distribution of the blood gene q is of particular interest. Throughout almost all of Eastern Europe north of the Danube, a higher q content is associated with greater cranial height; south of this river (and in southern Spain), even the areas with high cranial height are low in q. Almost only the Southern Lapps show deviating patterns: Southern Lapps have high cranial height but are very low in q, whereas the Northern Lapps, in contrast, have low cranial height and are rich in q.

The higher q content in Eastern Europe is apparently caused only to a small extent by Mongoloid blood (see, among other things, the above discussion on the distribution of cranial height). The q content is just as high in Estonia and western Poland as it is around Moscow—indeed, it is higher there than in central Ukraine, which is naturally incompatible with a purely Mongoloid source. The q content is thus evidently much older and inherent to many Eastern European races. For example, the almost entirely Mongol-free Europeans of northern India have a q content that is just as high as that of the Central Asian Mongoloids. Also worth noting is the rather significant and sudden increase in the q-content (as well as in relative cranial height!) in eastern Central Europe at the transition from the German to the Slavic language area—a fact that has received little attention from anthropologists.

If we superimpose distribution maps of the characteristics discussed so far, however, the boundaries rarely coincide completely in detail. This is to be expected, since both the variability and frequency of such characteristics are subject to the natural fluctuations exhibited by all forms of life. If, however, we focus on the centers and median types, a whole series of overlaps becomes apparent, which statistically confirm the reality of the types initially observed only empirically. In doing so, various revealing coincidences emerge in detail. For example, roughly at the foot of Germany's low mountain ranges, there is a marked increase in both pigmentation and short-headedness, combined with shorter stature, and such clusters of changes in most racial characteristics are also found elsewhere, such as among

ethnic boundary between Scandinavians and the Sami or between Russians and Kyrgyz.

With some generalization, one could—at least for educational purposes—divide Europe into four anthropologically distinct quadrants, with the intersection point roughly in Lusatia. We arrange them here in descending order of uniformity:

1. a q-poor, low- (and mostly also long-)harmful, fairly tall, and blond northwestern "Germanic" quadrant;
2. an equally q-poor and low-harmful (with the exception of southern Spain), but shorter and darker "Romance" southwestern quadrant (though with a highly variable head width-to-length ratio);
3. a similarly q-poor but highly harmful, and also fairly dark southeastern Balkan quadrant (with highly variable body height and highly variable head width-to-length ratio);
4. a "Slavic-Finnic" quadrant that is rich in q and also highly harmful, with varying colors and body heights and, for the most part, only slightly short heads. Outside these four quadrants lie the Lapp groups and, of course, the Mongoloid enclaves.

But apart from this somewhat artificial division into four parts, a synthetic anthropological map that combines all available characteristics into types usually resembles a dune landscape with peaks of the various types. For in addition to these natural centers, there are gradual transitions in spatial terms as well as gradual, slow shifts in temporal terms. Clusters of racial types are therefore neither as fixed as—say—a granite mountain range, nor as rapidly changing as, for example, a churning sea.

We therefore find in quite a few areas a *predominant* type in each case, which we can designate as a "race" or variety in the zoological sense, provided we do not impose greater demands on their uniformity than zoologists do on *their* races. However, we must not expect too great a spatial concentration of these types—that is, in the sense that *all* people in a given region would possess the type characteristic of that region and represent it in its most perfect form.

I am also less inclined to attribute extensive migratory dispersal to a race without clear historical and geographical grounds; rather, I tend to consider parallel development in different regions more often. This gives the racial map of Europe a much more natural appearance.

If we begin with Northwestern Europe, we encounter the *Northern race* (Deniker's race nordique): light-eyed, usually with fairly light hair, short-

and long-cranial, tall and slender with a more or less narrow face and narrow nose (q% nearly 0). It has several subraces. The most distinct are the *Fälische subrace* in western Germany, etc., which has a broader face and a more robust build, and the *North Atlantic subrace* (Deniker's nord-occidentale), which resembles the main type in its proportions but has dark hair and is found primarily in the coastal regions of Great Britain. The main type, found particularly in Scandinavia, was called the Teutonic-Nordic; I prefer the term "Scandinavian-Nordic subrace." In certain remote parts of Scandinavia and Ireland, small remnants of a more primitive type still survive—the Paleo-Atlantic type—which is darker than the Nordic race (especially the hair) and even larger than its Fälische subrace, with more pronounced brow ridges and a broader, more bulbous nose.

The small, stocky, and dark (q-poor) Central European individuals with short, low skulls and round faces belong to the (Western) *Alpine* race (Deniker's race occidentale ou cevennole); similar types with high skulls further to the east belong to the *Eastern Alpine* race.

The *Dinaric race* is very tall, dark, and has a short, high-domed skull with a very long but also fairly broad face and a large, more or less hooked nose (very low in q). It is native to Southeast Europe and has a very closely related, shorter (and somewhat higher in q) subrace in the Near East, namely the *Armenian*. The majority of the Caucasian mountain peoples are very closely related to the Armenids but are very low in q.

In western and central Russia, northern Poland, and—even more so—in Estonia and Finland, one encounters the *East Baltic* or (according to Deniker) *East European race*, which is light blond, with a short, high skull, a broad, angular face, and a snub nose (fairly rich in q). It is quite diverse. For example, in Finland there are two subtypes: a western Tavastian subtype (Deniker's "race subnordique"?) and an eastern Savolaxian subtype (Deniker's "race orientale"?). The latter is smaller and has a slightly less short cranium than the former, but is just as blond. In eastern Russia, however, we find in many regions a very small, dark, and very high- and long-cranial type, the *Vyatka people*, with a broad face and a small, stubby nose (high in q). Individual similar types are found westward as far as Bohemia, where they are known as the "Sudeten race."

We classify the Lapps, especially the Swedish Lapps, as belonging to the *Lappid* race. They are small, with a short, high skull and broad faces; they have weak lower jaws, small noses, and *very* few q-features. The Eastern Lapps often exhibit Mongoloid traits.

The other Mongoloid traits in Europe mostly belong to the

Central Mongoloids (Tungids), while some in northeastern Russia belong to the *Siberian* race. The former have very short skulls and are almost of medium height (*very* high in q), the latter have long skulls and are very short (lower in q); both have low skulls, broad faces, and broad noses.

The true *Mediterranean* race, the Western Mediterraneans (Deniker's Iberian-Insular race) in southwestern Europe (extending to southern Greece), has a long, low skull, is dark-skinned, small, slender (low in q), and has a narrow face. Within this group, however, there are remnants of the *Berberid* race, which is broader in body, face, and nose but otherwise very similar (in head shape, height, and coloration), and whose main area of distribution is North Africa. In addition, the Pontic or *Eastern Mediterranean* subrace is found in certain regions west and north of the Black Sea and further into Asia. The Iranian race in Iran and Afghanistan should also be included here.

The *Orientalid* or *Arabid* race (found among Bedouins, etc.) differs from the Western Mediterranean race almost exclusively in an unusually large number of characteristic facial features (almond-shaped eyes, a hooked nose, the "Semitic smile," etc.). It has a broader-built variant that was formerly found among the farmers of the "Fertile Crescent" (between the Arabian Plateau and the Near Eastern Highlands) and is now found primarily among the Jews.

Let us now turn to a brief description of *the racial composition of the individual countries*. This description applies to the period after the mid-19th century; thus—unless otherwise stated—it refers to the borders of that time. Readers must, however, remain aware of the summary and often problematic nature of such a concise description, particularly with regard to Eastern Europe.

We begin with the far *north*. The strong influences of a (fairly) dark, low-skulled, and short-cranial ("Alpinoid") race along the Norwegian west coast appear to have just as little close relationship to the short-high-skulled Southern Lapps as the latter have to the Mongoloids. The rest of Norway, like Sweden, is fairly purely Nordic (with various regional types) and exhibits Paleo-Atlantic influences in its most remote corners. Eastern European influences are found here and there along the Swedish east and southeast coasts. Iceland has some North Atlantic influences but is otherwise Nordic. *Denmark* is somewhat less Nordic on the islands (Eastern European and Alpine mixtures?), while Jutland is more Nordic. The same applies to the (present-day and historical) Frisian regions in *the Netherlands and northwestern Germany*, the latter of which, incidentally, is more Fälish and also has Alpine influences. Northeastern Germany has a racial mix similar to that of the northwest, but also has South German (especially Alpine) influences (explained by settlement), as well as some Eastern European influences mediated by the Slavs. However, a relative lack of the "q" trait and low skull index indicate that these influences are less pronounced than one might have expected. The (non-Frisian) Dutch are more Nordic in the north and exhibit Alpine influences in the south.

Southern Germany and (German) Austria are largely Dinaric, especially in the more mountainous regions—that is, less Nordic; they are more Alpine in the west and more Dinaric in the east (and in Alsace). More Nordic characteristics are found in all valley regions and, consequently, around Vienna as well. The Swiss Plateau is also more Nordic. In the French-

speaking parts of Switzerland, there may also be admixtures of a race similar to the North Atlantic type.

The *British Isles* are, as one might expect from their history, predominantly Nordic in the east; in parts of the counties of York and Lincoln and in parts of Lower Scotland, they are almost as Nordic as in Sweden or Friesland. The poorer parts of Scotland and almost all of Ireland, however, are predominantly North Atlantic. On this island, the counties of Wexford and Waterford are more Nordic, while the moorland regions of the northwest exhibit Paleo-Atlantic admixtures. Western Ireland, southwestern England, and, to an even greater extent, southern Wales are largely Mediterranean.

The southwestern, Romance-speaking quadrant is predominantly Mediterranean-Alpine, though it naturally also exhibits many other typological influences. The northernmost parts of *France* are strongly Nordic, whereas Wallonia in Belgium to the east is more Alpine. Northeastern France is primarily Nordic-Alpine, central France predominantly Alpine, and finally, southwestern France predominantly Mediterranean-Alpine. In general, the north exhibits more Nordic elements, the south more Mediterranean elements, and the mountainous regions—the Massif Central and Brittany—more Alpine elements; in the Périgord, there are even Berber elements. In Brittany, there are also North Atlantic influences (due to Britons who fled from southwest England in the Early Middle Ages). Dinaric types are found in the Western Alps and the Pyrenees.

The *Basques* exhibit a distinct, tall physique and are particularly characterized by their athletic features, which include a sharp chin and a large nose. However, their very pronounced low cranial height precludes the possibility of Dinaric influences. The French Basques, on the other hand, possess more Alpine influences, which give rise to a readily recognizable regional type with, as it were, bulging temples.

Northern Spain is predominantly Western Mediterranean with Nordic, Alpine (in the Asturian mountains), and some Berber influences. The rest of the Iberian Peninsula is predominantly Mediterranean with Nordic influences and, as one moves south, increasingly frequent Berber influences.

Sardinia is Mediterranean and exhibits abundant Berberid remnants in its interior. Corsica is mostly Mediterranean; Sicily is similar but, in keeping with its history, has a greater admixture of Armenids, Nordids, Orientalids, Berberids, etc. The southernmost part *of Italy* possesses the same mixture, though with a stronger Mediterranean component. In Campania, we encounter a fair number of Armenids and Orientalids as well. Central Italy exhibits a mixture of Mediterranean and Alpine types with Nordic and other influences. Further north, in the west around Lucca, we again find an apparently strong enclave of Mediterranean dolichocephalic types, while in the east, in Romagna, there is an Alpine-Dinaric mixture. The situation is similar in the Po Valley and the surrounding mountains, though there is a higher proportion of Nordic types there, particularly in the relatively malaria-free areas located above 300 m. A final concentrated “island” of Mediterranean racial (and climatic) characteristics lies around Lake Garda.

East of the Adriatic Sea, the *South Slavic regions* are mostly predominantly Dinaric, consisting mainly of barren karst landscapes in the interior, with the highest concentration in the south (Herzegovina and, to an even greater extent, Montenegro). Toward German-Austria, Nordic influences increase, while toward the northeast, Eastern European influences become more prevalent. Albania is somewhat less Dinaric; it also has Nordic, East Alpine, and other influences. In *Greece*, the Dinaric type predominates only in the west; in contrast, East Mediterranean types are found toward the northeast, and on the Sporades, dark, long-cranial types (*presumably* of the West Mediterranean race). Blond people are also found in Greece, belonging to both the Nordic and, to an even greater extent, the East European races.

Bulgaria (and also Moldova) appears to be predominantly East Mediterranean with East European and Nordic influences; Dinaric types are found only in the west. The situation is similar in *Romania*, where Wallachia along the Carpathian Arc and Transylvania are home to numerous Dinaric and East European types.

Hungary is probably the most ethnically mixed country in Europe, though perhaps predominantly Alpine, with significant Eastern European and Dinaric elements in the east. In some places, noticeable Mongoloid influences are evident (such as around Lake Balaton and in the Puszta). The *Czech Republic* is of an East European-Eastern Alpine type with Nordic influences in the basin regions and Dinaric influences in the peripheral mountain ranges, and similar conditions are found in southwestern Poland, where, however, the East European race predominates far more strongly in the plains. Lithuania, northern Poland, and adjacent parts of Belarus, on the other hand, are—albeit very mixed—blonder, and of a predominantly Nordic type. The boundary between the blonder and brunette regions is apparently quite sharp and, interestingly, roughly follows the phytogeographic boundary between the more open loess forests in the south and the swamp forests in the north.

In southwestern Russia, the predominantly East Mediterranean region extends from the Dniester River to beyond Odessa. Around the Don River lies a similar region (remnants of descendants of Irano-Scythian tribes?). The *Ukrainians* proper, by contrast, are tall and have short skulls, and include almost as many blond as brunette types; they are thus strongly Dinaric, though with Eastern European and Nordic influences. Central *Great Russia* is much shorter in stature and has coarser, rounder faces, and is thus Eastern European-Eastern Alpine, with Nordic influences in the north.

Toward the Volga, Vyatka influences become more prevalent and likely predominate in some of the Volga-Finnic regions. Here, where the Tatars also once lived in large numbers (and in some cases still do today), a stronger Mongoloid admixture also begins. Among the Turkic-speaking Bashkirs on the other side of the Volga, the Mongoloid type dominates, though not as strongly as among the Kyrgyz living further into Central Asia. The more highly civilized Tatars in southeastern Russia (from the Crimea to Kazan), on the other hand, are heavily mixed with the blood of the predominantly Aramean Caucasian peoples.

The very sparsely populated northeastern Russia is predominantly Eastern European-Vyatka in type and has some Nordic and Mongolian influences. Around the White Sea, the Nordic influences become more prevalent. Lappish features also occur occasionally.

In the former *Baltic provinces*, the Estonians are very blond, mostly tall, with medium to slightly short craniums, and thus predominantly Eastern European-Nordic. The Latvians resemble them somewhat but have shorter craniums and are also darker; they also have Dinaric and ~~, to a lesser extent~~, Eastern Mediterranean influences.

In *Finland*, as recently as the turn of the last century, the coastal population in many areas was linguistically purely Swedish, whereas the inland population (as always) was purely Finnish. *Racially*, however, the tribes—as is so often the case—are somewhat less distinct. The boundary between the Eastern European subraces—the Tawastids in the west and the Sawolaxids in the east—was, until recently, quite distinct and corresponded to a certain extent with certain differences of an ethnographic and dialectal nature. Northern Finland has a slight Lappid admixture.

With this, we have covered all the European peoples living in concentrated communities. In addition, however, there are also Jews, Gypsies, and Armenians living here in more or less scattered communities. As is well known, the *Jews* consist of Eastern and Western Jews. Among the Eastern Jews, the Armenian type is strongly represented, but so is the Arab (Oriental) race—as evidenced by their short skulls and facial features. This is all the more understandable now that we know that part of their short skulls was caused solely by growth disorders during their youth while living in the ghetto and is therefore not passed on to their offspring in a normal environment. Furthermore, as Jews who are now long-established Central Europeans, they have likely not entirely escaped the apparently quite widespread Central European (hereditary) brachycephaly. Added to this, of course, are influences from the respective host populations, particularly those of Alpine, Nordic, and Eastern European racial types.

Southern Jews, on the other hand, contrary to common belief (held by both Jews

and non-Jews alike), have retained less of the ancient Jewish genetic heritage. They are apparently mostly of Southern Mediterranean origin, though with strong Arabid influences. Curiously, the otherwise very weak influence of the Negroid race among the Jews is presumably stronger among Eastern Jews than among Southern Jews. The physical differences between the two groups are, however, somewhat less pronounced among Jews living in the same Western European-American environment, since here most of them more or less approach the slimmer, "more refined" Southern Jewish type. The Karaites, a Jewish sect that lived primarily in Lithuania and the Crimea, on the other hand, predominantly exhibit Mongoloid types, which is consistent with the view that they are primarily the descendants of Mongolian Khazars who converted to Judaism in the early Middle Ages (they are also extremely rich in the "q" allele).

The *Gypsies*, who originate from northern India, are a mixture of mostly long-cranial, eastern Europoid races—namely the Iranians and Indians—with admixtures from primitive Indian races as well as from Europe and the Near East.

The *Armenians* naturally belong predominantly to the Armenid race named after them, but they have more or less pronounced admixtures of Eastern Mediterranean and also Nordic races, and only extremely weak admixtures of the Arabid race; this is why there are some similarities but all the greater differences compared to the (Eastern) Jews.

Among the races that are still Europid but no longer European—that is, members of the "white" racial groups outside Europe who, in the "brown racial belt," adjoin the Mediterraneans and Iranians to the east—the *Indids*, whose main population is found in northern India, should also be mentioned. They are of medium height, slender, and more heavily pigmented than the other Europids. They predominate in all flat, arable areas—that is, along the Indus, Ganges, and Brahmaputra rivers—but also in the large basin landscapes of the Deccan, the Malabar Plains, and in western Ceylon. Following them is a type often interpreted as "primitive-Europid": the *Weddids*. They appear to be a childlike variant of the Indids. They are smaller, have broader noses, and rounder faces than the Indids, and live in the forested regions of central and northern India and Ceylon, though they also extend into the Indonesian archipelago and the Indian subcontinent. Finally, the *Polynesians* —who have shorter heads and are taller than the Indids, and are famous as brilliant seafarers—are found throughout the Pacific Islands, though in the north (Micronesia) they are heavily intermixed with Mongoloid elements.

This concludes the discussion of the essential regional differences in the physical characteristics of the European races. Unfortunately, space does not permit a discussion of the body types that occur with varying frequency among the individual races, nor of the *psychological* differences that—due to the varying frequency of predispositions among the individual racial types—lead to diverse psychological reactions and are certainly of interest to the historian. However, the limited and reasonably reliable material available to date could hardly be presented without a certain breadth of discussion, for which there is insufficient space here.

BREED TYPES AND TYPE DYNAMICS IN ASIA

BY EGON FRHR. VON EICKSTEDT

I. THE VARIETIES

1. TYPE AND GEOGRAPHY

A BREAK and boundary in the distribution of Asian hominids is formed by the mountain range stretching across the continent from the western Himalayas to the East Siberian ranges: *to the west* of it (beginning with a broad, sparsely populated contact zone) and to the southwest of it (still only sparsely intermingled today) arose the densely populated Europid racial group, while *to the east* and southeast of it (still virtually unaffected today) arose the Mongoloid group (p. 159). Toward the south, however, Mongoloid influences spread far beyond the Indonesian archipelago, and toward the east, they helped, in a staggered sequence of layers together with Europids, to establish the late Indian regional forms of the Americas [*cf. p. 153 and J. Imbelloni, p. 197*]. Therefore, in order to understand the Asian group of hominids biologically and, above all, biohistorically, one must first free oneself from the notion that "Asia" extends as far as the Urals. From a biological perspective, there is no "Asia" at all, but only the *vast Eurasian continent*, whose western group of forms has its primary domain west of the great transcontinental mountain range and whose eastern group of forms has its primary domain east of it. We turn our attention to the eastern group, first to its current range of types, then to its biohistorical dynamics.

The *core* of the subspecies Homo sapiens asiaticus (Linnaeus 1758)—that is, the Mongoloids—is formed by the *Tungusic people* of the Central Asian steppes, who were once well-isolated in biographical terms and remain so today in economic terms. Only to the north has there been, in more recent "subhistorical" times, a very limited seepage into the vast expanses of northern Siberia. Toward the south, however, descent from the steppe highlands has always meant entry into and assimilation within the vast, populous domain of the *Sinic* race and mass. This domain is very clearly divided into three distinct tiers, roughly parallel in terms of climate, space, and type: Northern Sinids in the northern Huang He landscapes, Central Sinids in the central Yangtze landscapes, and Southern Sinids in the southern Sikiang landscapes—a threefold attenuation of the spatial elements, a threefold attenuation of the Mongoloid characteristics. Thus, the transition of the southern

Sinids into the southernmost Mongoloid regional form—the continental wing of *the Paläomongoloids* in the compartmentalized southern forest zone—is almost imperceptible; this wing, in turn—often intermingled with the already Old European Weddids—extends with its insular wing far beyond the Indonesian archipelago, until it meets the migratory mass of the Melanesids *[cf. R. Biasutti, p. 209]*. The zonal, habitat-based interconnection of Eastern humanity is thus most clearly reflected in the north-south typological gradation of the Mongoloid varieties. It has continued to follow the climate-driven gradation of habitat-based biocenoses to this day.

However, the wave of hominids—who once lived beyond the South Asian forest and mountain belt (south of the Irano-Himalayan mountain range and the Chinese southern forest)—also left behind in Asia some remnants of the dark-skinned southern human population: the largely Europidized contact form of *the* progressive *Melanids* of southern India and the proto-Weddid-protonegritoid contact form of the primitive Malids of the southern Western Ghats, as well as the small-statured *Negritos* in the most remote primeval forests and islands. They form the biological cornerstones of the circum-Indo-Oceanic arc of Southern humanity [*cf. R. Biasutti, p. 209*].

General Characteristics

What generally characterizes the Mongoloid subspecies distributed across the vast continental Eastern region is, above all, the following: yellowish to yellowish-brown, soft *skin*; coarse, round in cross-section, and sparse *hair*; and a flat facial structure (in contrast to the fair skin, wavy hair, and sculpted facial features of the Europids, and the dark skin, curly hair, and primitive facial features of the Negrids). Their typical *facial shape* is determined primarily by the width and height of the angular, protruding cheekbones, but also by the far less pronounced relief and the considerable padding provided by the moderately differentiated musculature and fat deposits. This is further accentuated by the slightly protruding eyeball, which is padded with fat at the back. The palpebral fissure, however, exhibits that unique formation known as *the Mongolian fold*: the high and broad upper eyelid fold extends across its entire width beyond the edge of the eyelid and, at the inner canthus, even covers the otherwise clearly visible reddish lacrimal caruncle, merging broadly and flatly into the skin of the lower nasal root. Apparent strabismus (pseudostrabismus mongolicus) and true or secondary squint (slit-like eyes) are often associated with this. Finally, the *physique* shows a tendency toward stockiness and compactness—

PREDOMINANT HUMAN RACE TYPES IN ASIA BEFORE THE SPREAD OF EUROPIDS

Western I Arabide and Eastern Iranide Orientalide

ndide

Armenids

Turanide

Melanides

Western and Eastern Weddids

Tungids

Northern, Central, and Southern Sinids

Palaungids and Nesids Paleomongolids

Sibiride

Ainuids

Bambutide and Negritide Pygmide

Australids

Neo- and Paleo-Melanesian

Polynesian

appearance. The bones, hands, and feet are delicate; flexibility is considerable; the body is sparsely haired.

The oldest description of the Mongoloids comes from the pen of Jordanes (c. 500–560), who recounts Priscus Rhetor's impression of Attila, the Hun king: "He was short in stature, broad-chested, but his eyes were small; he also had little beard, widely spaced teeth, and a flat nose. Thus, through his repulsive appearance, he displayed the hallmarks of his origin." And regarding the Huns themselves, it is said:

"...the terrifying sight of them... a gloomy and sullen demeanor... their bodies form, so to speak, shapeless lumps; they have no proper (that is, well-defined!) face at all, and only dots for eyes; they also lack the decorative beard of men. They are nimble and always stand upright with pride."

Even more vividly described in the call to arms by Yvo of Narbonne, who witnessed the Mongol invasion in 1241:

"They have a robust and strong chest, a gaunt, sallow face, firm and upright shoulders, a broad, flattened, and short nose, a pointed chin, and flat but prominent cheekbones, as well as long, widely spaced teeth. Their eyelids extend from the slits of their eyes to their noses, and their eyes are restless and black, as well as slanted and fierce."

2. THE TUNGID CORE

Varietas Homo sapiens tatarus [Erxleben 1777]

Physical Appearance. The Tungids have a stocky, broad, and squat build of medium height; their skin is light yellowish-brown; their hair is coarse; and their face is low, flat, and sparsely haired, with fat-padded cheekbones that protrude widely, high, and angularly. The eyeballs, which are themselves slightly protruding, are covered by narrow, slit-like, highly Mongoloid eyelid folds. Otherwise, the nose is of medium height and width, the lips are of medium width, and the forehead is low; the skull is flat, and the head is short. The bone structure is delicate, yet physical strength is considerable.

Distribution. All tribes and banners of Mongolia, as well as the Transbaikal Buryats, the Torguts, and the Kalmyks, are Tungid; so too are the distant Samoyeds in the northwest and, for the most part, the Gilyaks and Alcuts in the east. The Tungus, however, are already a diluted form of the Siberian type; the Manchus are Sinic; and the Bashkirs and the heavily mixed "Tatars" in Eastern Russia are intermixed with European features. Among the Turkmen and Turks, only the Turkic-Mongolian language remains. An enormously broad zone and a strong core—but only a few million people.

3. THE THREE SINID STAGES

Varietas **Homo sapiens sinicus** [Bory 1825]

Physical appearance. The Northern Sinid is slender, long-faced, with a fairly long nose, and still light yellow-brown in complexion; he naturally exhibits the Mongolian fold with all its accompanying features—protrusion, marginal padding, oblique orientation, and pseudostrabismus—albeit in a more moderate form than among the Tungids; the bridge of the nose is also higher, and the angularity of the cheeks is less pronounced. Despite a small chin, this represents a progressive hominid form almost akin to that of the Nordic and Dinaric types—a phylogenetic peak type. However, both progressiveness and species-specific characteristics gradually diminish from the subvarietas H. sinicus borealis Liu 1937 through the medius to the meridionalis in every respect—body height, facial length, nasal width, lip shape, etc.—step by step. The Mongoloid features of the cheeks and eyes also become less pronounced; the hair becomes softer, and the skin more brownish, step by step,

all of this leading toward the brown, small, childlike tropical form of the Paläomongoloids, which is only slightly differentiated from the Mongoloid type.

Distribution Area. China itself, with the three major centers of specialization in the valley clearings of its three characteristic river systems, is the ancestral homeland of the Sinids. From here, each of their three subvarieties flowed into neighboring regions: The Northern Sinids from the Huang He into Manchuria and toward the Yangtze; the Central Sinids toward Yunnan, into the Sikiang Basin, and across the sea; and the migratory Southern Sinids to Annam, the Indian subcontinent, Malaya, and Indonesia, where merchant colonies have existed since ancient times and, more recently, a predominantly Southern and Central Sinid labor diaspora has emerged. The distinctly marked *Tibetan ethnic type* can be classified with the Central Sinids, while the North Korean-Manchurian type can be classified with the Northern Sinids. The racial basis of the Lolo is Northern Sinid, that of the Miao is Central Sinid, and that of the Yao is Southern Sinid. With hundreds of millions of people, the Sinids are the most populous ethnic group on Earth.

4. THE PALEO-MONGOLOID TROPICAL FORM

Varietas Homo sapiens palaemongolicus [v. Eickstedt 1937 ex 1928]

Physical appearance. Small in stature, somewhat stocky, and very graceful, with a velvety brown complexion and straight, even wavy hair, along with a broad nose, full lips, and a slightly round face, as well as rounded, rather than angular, cheekbones and often only a very slight manifestation of the Mongolian fold; the Palaemongolids constitute both the tropical counterpart to the Europoid Weddids within the Mongoloid racial group and the transitional form from them to the Southern Sinids. A harmonized contact form.

Distribution. Amid numerous local variants, the Palämongolids extend from the forested Indo-Tibetan-Chinese border regions through western Hinterindien to the entire vast Malay Archipelago. In their core region, a distinction is made (according to Haddon) between a *pareïde or continental* type group and a *neside or insular* one. The bulbous-faced Palaungids, angular Kachinids, long-faced Chin and Naga, as well as the stocky-jawed Malays and slender-limbed Javanese, each form well-defined tribal types, with influences extending as far as the Mundari people in eastern India (Sora, Horo) and, in particular, to southern Tibet and Korea. But the Palämongoloids also extend, on the one hand, far across the sea to the Hova upper class of Madagascar—which has been influenced by the Kafrids—and, on the other hand, to the Micronesians of the Pacific, from where the Amazon region may have been influenced; finally, they form the basic type of the Japanese people (Satsuma type), especially in the south. One of the most populous and widely distributed races on Earth!

5. SIBERIAN REMNANTS

Varietas Homo sapiens hyperboreus [Bory 1825]

Physical appearance. Of small stature and with only moderate Mongoloid features in their hair, skin, and face—though they have broad zygomatic arches, they also often have large, hooked noses reminiscent of Native Americans, and even light-colored or gray eyes and rosy cheeks—the Siberids represent a typical intermediate form between the Europoid and Mongoloid types on this side of the continent, which is of proto-European origin. Their build is stocky, their faces heavy and angular; Native American, Ainu, and Pacific Islander features are not uncommon.

Distribution. From the remnants and fragments of the Siberids, as well as the Voguls, Eastern Yakuts, and Ketos of northeastern Russia and western Siberia, they extend—or extended—past the Tungid Tungusian intrusion through southern Central Siberia far to the east, only to dominate once again in the vast region of northeastern Siberia among the Yakuts, Telengets, Kamchadals, and others. From here, their type merges into the Eskimoids and Pacificoids. Their population numbers only a few tens of thousands.

6. THE SOUTH ASIAN PYGMY SUBGROUPS

Homo sapiens pygmaei [Giuffrida-Ruggeri 1912]

Physical Characteristics. In contrast to the African, i.e., Bambutid, dwarf form [cf. *H. Baumann*, p. 167 ff.] of the South Asian population—which was the only hominid subspecies to develop pygmy forms—the Asian Pygmies or *Negritos* do not exhibit childlike proportions, i.e., short legs, a long torso, and a large head, but rather, on the contrary, a well-proportioned, slender build. With deep black-brown, frizzy hair, smooth skin, and a slightly steatopygous build, they also have only moderately wide noses and lips. Thus, the Andamanese Negritos in particular can make an exceptionally pleasing impression. In contrast, the Malaccan Semang exhibit a pronounced coarse component, while the Philippine Aeta display a certain coarseness in their features; furthermore, these latter two local types have much thicker lips. A slender build, agility, and the highest level of mental alertness are common to all Pygmies.

Distribution. In extreme isolation on the most remote islands: undisturbed on the Andamans until 1857; living in seclusion alongside the most primitive of the Weddides (the Sakai) in the interior of the Malay Peninsula; and already assimilated by the Paläomongoloids on Luzon (Apayao, Zambales, Ezijas), Palawan, and several other remote Philippine islands. An Ur-Negroid component is incorporated into the Malid subtype of the South Indian Weddides; however, multiple reports of remnants in the Indian subcontinent have not been confirmed.

7. THE MELANID RACIAL TYPE

Homo sapiens indomelanicus [Eickstedt 1937 ex Deniker 1900]

Physical appearance. Even more so than with the trans-Saharan Abessomal Aethiopids of Africa, one might speak of representatives of the “white” race in the Asian contact form of the Europo-Negroid transitional belt—were they not “black.” For the hair of the Melanids is only slightly more wavy, and their lips are no fuller than those of their North Indian neighboring form. The face is slightly rectangular, notably broad-jawed and somewhat low. The steep forehead protrudes, and the medium-height nose has a very narrow bridge and is of medium width, thus triangular in plan view. The body is of medium height and slightly stocky, with deep dark-brown skin.

Distribution. Two remnant groups in India stand out sharply: 1. in the Tamil region of the southern alluvial plains (the Carnatic type of the highly civilized South Dravidians), to which Ceylon and Mysore are connected via offshoots and relics, respectively, and then 2. linked by remnants in the Eastern Ghats, on the Chota Nagpur Plateau among the Munda, Ho, and Santal, and from there fading into the lower castes of the Doab (the Kolide type of the primitive Austro-Asian remnants). The protective and isolated location is evident in both cases: in one instance behind the double barrier of the Deccan’s peripheral mountain ranges, and in the other on a jungle-surrounded, fortress-like plateau.

II. THE DYNAMICS OF TYPES

1. THE PREREQUISITES

During the Ice Age, a barrier of glaciers and firn deserts, frozen solid by the ice, stretched diagonally across High Asia from the Himalayas to the Chukchi Peninsula, biologically separating the eastern and western parts of the supercontinent to a large extent and

created two virtually entirely independent areas of development. *Isolation*, however, is a decisive factor in evolutionary biology. The new mutational forces that sprang up in the ceaseless evolution of the forms in the West—in the blessed Turan, in the flourishing Saharian region, and even in the stunted periphery of Europe, had, therefore, at that time only extremely limited contact with the distant world of the East—with the cold Gobi of High Asia, the fertile Chinese valley basins, and the mighty southern forest barrier in what is now Hinterindia. Thus, and quite abruptly, Europid forms here and Mongoloid forms there first appear between or after the Würm glaciations and soon come into contact with one another. But this inevitably also meant displacement, supplantation, and intermingling—and with this begins, here as in Europe, the racial history of modern humanity.

The *northward* advance of the Mongoloids—considered in terms of its spatial extent—is immense. It led them from quite habitable and extensive territories—that is, with a relatively large population and as more highly developed forms—into Siberia via the Baikal Gate and the Baikal Trench as the cold belts receded. This later resulted in the Siberian racial fragmentation zone. Biologically even more significant was the opening of land and marginal bridges *to the east*, which provided a path for both the retreating Proto-Siberians—with their *Europid* morphological impulses—and the seeping-in Proto-East Asians—with *their Mongoloid* morphological impulses—into regions that were apparently entirely or virtually uninhabited. They opened up a new continent to the hominids: America. All human varieties in America therefore exhibit, layer by layer, to varying degrees and through diverse environmental-driven and environment-dependent further development, *both* Europoid and Mongoloid characteristics *[cf. J. Imbelloni, p. 197]*. But in *the west*, too, the barriers dissolve; the Dzungarian Gate, long frozen shut, opens, and beyond the scrub and steppe, vast steppe lands once again stretch out: Turan and Western Siberia, whose hominids flow westward into an ever-larger and more prosperous Europe. The Mongoloids follow in their wake. And the drier their territory becomes, the more barren—indeed, the more desert-like—Central Asia grows, the more numerous and powerful this migration becomes. Even historical times are filled and shaped by the pressure of the Mongols, from Attila to Genghis Khan, and by the seeping waves—or, more accurately, the successive waves—of Eastern Europeans, from Bolesław Chrobry to the present day. And finally, *in the south* as well, the rainforests gave way, the Melanides retreated, and the Mongoloids—prehistorically clear and tangible—also broke through this last wall of their Ice Age prison and surged forward, once again intermingling with the Europids, this time particularly with Vedic forms, toward

Indonesia, gradually creating the present-day picture of the Indo-Malay typological world.

Small was the Mongoloid cell, narrow its northern Tungid-High Asian area of specialization, confined the network of the Sinid-Chinese lowlands, sparse the clearing in the Paleo-Mongolian-South Chinese rainforests. But the impact in all directions—from Hungary to Tierra del Fuego, from the Urals to New Guinea, from Alaska to Madagascar—was truly immense. We must now trace the biohistorical stages of this expansion.

2. ASIAN PREHISTORY

Yet the *earliest* prehistory reveals little of these global and world-historical dimensions. The *Sinanthropus populations* of northern China (the Beijing area) and the various *Pithecanthropus groups* of southern Java (the Solo area) [*cf. J. Kälin, p. 64 ff.*] show just as little evidence of Mongoloid traits as the alarmingly gigantic Giganthropithecus species of the Sino-Malay landmass of that time, which were interposed between the two. Everything is still in the process of formation; stratification and ancestral lineages dominate the scene.

The oldest recent find comes once again from the Peking region: the humans from the *Upper Cave* of Zhoukoudian [= *Chou-kou-tien*; *see J. Kälin, p. 68, H. Vallois, p. 105*]. By this time, the Pluvial-Glacial period was drawing to a close, and it is now that *the most pronounced Mongoloid features* appear, along with certain Melanesian and Amerindian influences; the latter, in particular, received due attention here, so to speak, on the way to the Americas.

3. THE TUNGID CENTER OF MOVEMENT

With the gradual disappearance of permafrost and glacial waters during the Postglacial period, scrub forest and scrub fauna migrated to the vast plateaus of High Asia—present-day Mongolia and then Tibet—and with them came the people of the East. This opened up a very favorable habitat for the eastern hunter-gatherers. It is therefore not surprising that vast quantities of Mesolithic *[cf. J. G. D. Clark, p. 321]* and Neolithic stone artifacts belonging to the (eventually) potter-making*"dune dwellers"*were found at the now-vanished remnant lakes in Mongolia. The population was therefore relatively dense. But then desiccation, deforestation, and finally steppe formation continued to advance, and only the invention of animal husbandry—and with it, so-called pastoral nomadism—secured a livelihood for those who remained.

Consequently, the East Asian hunter-gatherer society gave rise to two sharply distinct economic spheres *[cf. W. Schmidt, p. 388; K. J. Narr, pp. 521 ff.]* and, necessarily, also to different racially typological isolation zones: the livestock-breeding, nomadic zone of *the Tungids*

of High Asia and the swidden-farming, sedentary *Sinids* of eastern Low Asia. *From this point on, their opposition and rivalry determined the course of the biohistory of all of East Asia.* Admittedly, neither of the two rivals was able to permanently challenge the other's economic sphere, which was fundamentally alien to it. However, the progressive steppeification—and ultimately, the widespread desert-like aridification—of High Asia did lead to constant outward pressure from the Tungids; and since the climatic cycles proceeded in bursts that were, in some cases, quite regular (occurring about three times per century), this also resulted in *frequent explosive outbursts by starving nomadic tribes*. If a leader emerged, his only recourse—out of necessity and tribal feuds—was to attack the wealthy farmers of the surrounding lands. Here, then, lies Asia's "racial pulse."

4. THE OUTFLOW OF THE OPPRESSED

Thus, since prehistoric times, *Chinese history* has been shaped by incursions and waves of migration from the north, and for the Sinic masses, the only path open to them was always *southward*. This was also to prove decisive for the subsequent course of events—that is, the entire East Asian racial dynamic: in its broad strokes, it has repeatedly known only pressure and an escape route toward the south and ever more distant south. The north is the rear. The two main routes into China, however, were the *Yü-men Pass* and the Gate of *Liau-ho*.

Even the first northern Chinese *Hsia Dynasty* on the middle Huang He (2205–1766), followed by the *Shang* (1766–1401 and 1122, respectively) along the entire lower Huang He, originated in the north, and the much-celebrated ancient Duke Dan-fu, ancestor of the illustrious *Zhou* imperial house (1122–770 or 249), originally belonged to those tribes that, since the 19th century B.C., have been collectively referred to as the Hun, later the Hu, and finally the Xiongnu. These are the *Huns* of the Europeans and the Huna of the Indians (White Huns or Ephthalites: 5th century). But no sooner does such a Hunnic "barbarian tribe"—often only gradually, through vassal states—achieve supremacy than it succumbs to the formidable absorptive power of the towering Chinese culture and must soon defend itself against the ceaselessly encroaching kinsmen from the steppe. During the reign of the Hun emperor *Mau-dun* (209–174), Mongolia and China vied for dominance over the Eastern world—and China, with its powerful Han culture (206 BCE to 220 CE), naturally prevailed. But later, to name just a few of the most important—the Zhao (319 CE), later the Liang (397) and Tang (923), and *the Yuan* (1280–1368: from Kublai Khan to Tongking). The Tibetans (314–451), the Tungus (398, 535, 937), the Manchus (1644–1912), and others are also included. All are assimilated, but not without leaving their mark.

However, ever since the mighty Qin Emperor Shi Huangdi (221–209), an earthen wall—which was eventually expanded to become the largest structure in the world—has defended the so-called

Great Wall, at least at times, kept the hungry nomads at bay, and the flow poured *westward*. In the transcontinental steppe belt, the Tungid center of unrest in the Yellow World proved superior to the adjoining, smaller Turanid center of the White World. The Tungid pastoral warrior culture of the Mongolian high steppes followed the westward-marching Protonordids *[cf. p. 126]* through the Dzungarian Gate, divided linguistically into the Mongol group of the steppes and the Turkic group of the mountains, overlaid the Turanids, and finally drove them largely out of the pasture-rich Turan, mongolizing the region so thoroughly that the Europeans forgot this proto-European space altogether, sought to turn the blond-Nordic Scythians into Mongols, and made Asia begin as early as the Urals! Biologically speaking, it does not begin until the Altai Mountains. However, the Huns, who launched the so-called Migration Period against Rome as part of the Scandinavian southward migration *[cf. p. 127]*, were indeed of the Tungid race (description on p. 150), as was *Attila* (434–453), who resided on the Tisza and waged war in France and Italy, and his hordes, composed of the most heterogeneous elements—Mongolian guard banners, Chinese ministerial officials, Turkestan scribes, Persian baggage trains, Scythian and Germanic generals, etc.—sought, as they put it, to turn useless, densely populated farmland into useful pastureland. *The anthropological character of the vast belt stretching from western Ukraine to eastern Turan changed radically.*

Next came the Mongol *Avars* with their empire extending as far as Thuringia (566), semi-Turkic Finno-Ugrians from the Lower Volga to the Lower Danube as *Bulgars* (7th century), and an upper class soon absorbed by the trickling-in Slavs (9th century); then *the Magyars* from the Kama River to Hungary (the "conquest" of the 10th century), the Uighurs, then the Cumans, and finally the Pechenegs in Ukraine and the Balkans. And then came the military columns of the Emperor of the World, the towering *Genghis Khan* (1155–1227), and his grandsons and marshals, reaching as far as Liegnitz and Vienna (1241: description of the Tungids by Ivo of Narbonne, p. 150), as far as Isfahan (1220, 1392), Baghdad (1258, 1393), and Delhi (1221, 1398). In Asia Minor, the Oghuz Seljuks—who had evaded the Mongols—established themselves from 1077 onward and finally under *Osman* (1288). The great *Timur* (1336–1405) once again brought half of Asia under his control. In *Russia*, the Mongols ruled as the Golden Horde from 1237 to 1478, and their influence never truly faded there. Remnants of Turkicized Mongols have persisted as the so-called "Tatars," particularly in southern Russia, to this day (Crimea, Volga). The Kyrgyz and Cossacks arrived late (10th century), and even later did the Torgut Kalmyks (1703–1945). The influence of the Tungusic center of unrest is truly global and of great historical significance. Parallels as well as differences with the West (Scandinavia, Indo-Europeans) are striking.

Meanwhile, as a result of the pressure exerted *toward the north*, the vast expanses of Northeast Asia had also largely fallen into Tungusic hands. The stream of people entering the Siberian threshold as *Tungus*

(Dung-hu) had largely displaced the simple fishing and hunting populations of the Siberids and divided them into an eastern and a western wing (p. 151). Individual groups, such as the northwestern *Samoyeds* or the northeastern *Yakuts*, had advanced far to the northern continental borders, just as, in the Far East, the Gilyaks had reached the sea and unknown but certainly numerous Tungid tribes had reached *Japan*, where they have had a significant influence on the ethnic type of the population. Meanwhile, the Ainu had long since been pushed back to the island arc, and the Eskimos to North America *[cf. W. Schmidt, p. 382]* and, around the year 1000, also to Greenland. The direct impact of the Tungusic center of unrest extends across the entire Eurasian continent, while its indirect impact reaches far beyond.

5. THE SINID BLOCK

In the post-glacial period, the Sinic region was covered with dense forests, from which the three major river systems of *the Huang He, Yangtze, and Si Jiang* stood out as the primary hunting and gathering grounds. Here, the three subtypes of *the Northern, Central, and Southern Sinids* emerged successively from north to south and in relative isolation. However, the morphological and psychological differences between the former and the latter are so great that they would in themselves justify classifying them as distinct varieties. By far the largest habitat was that of the Northern Sinid loess people and millet farmers; considerably smaller was that of the Central Sinid river people and rice farmers, who, evading pressure from the north, soon moved onto the *Tibetan plateaus*; while the smallest was that of the South Sinid fishermen and gatherers, who subsequently seeped into the broad *southern forest zone* under northern pressure and there, in contact with the Europid primitive form of the Weddids [*cf. p. 132 ff.*], which had migrated on from the Indian subcontinent, gave rise to the Palaeomongolid forest people and hunters.

The *main* biodynamic *pressure thus emanated from the numerous Northern Sinids* of the central Huang He, who were denied escape routes to the north by the Tungid Mongols, to the west by the Tibetan high mountains, and to the east by the sea. It was among them, during the Hsia Dynasty around 2200, that a state emerged as the nucleus of the Chinese Empire, one that would decisively shape the biodynamics of the following millennia throughout East Asia. *The unfolding of these processes* into historical times proceeds *with an almost astonishing consistency* and regularity.

Evidence for this is provided by Chinese annals and local chronicles, the founding dates of Chinese cities, and the analysis of paleoethnological and modern ethnological conditions. As early as the 2nd millennium BCE, there was lively trade between the emerging political entities of the Chinese-speaking Northern Sinides of the Huang He and the Tai-speaking Central Sinides of the Yangtze. The former, however, was marked by conflicts between the *millet farmers of the north* and the *rice farmers of the south*. A significant—and often decisive—factor in this was the greater momentum and expansive power of (Northern) *Chinese culture*. It was unrivaled, encompassing both friend and foe, and ultimately led state after state to join the Chinese imperial confederation without fanfare. Within this empire, supremacy later temporarily passed to the south (the State of Chu, 679–223 B.C.), and China was a Tai empire, not a Chinese empire. Rather, this has only been the case since the reign of the great, forceful ruler and *unifier of the empire, Emperor Qin Shi Huangdi*, the King of Qin, after whom the hegemony of the East is rightly called Qin = China. From this point on, the northern Sinicized Chinese and the central Sinicized Tai (Chinese: Man) merged into a single nation. Yet along the Yangtze, the Tai language was still widely spoken well into the days of the Venetian viceroy Marco Polo (1254–1323).

Two routes of escape were open to the politically and economically oppressed upper classes of the Tai: *southwestward* across the Red Basin of Sichuan to *Yunnan*, and *southeastward along* the coast toward *Canton* (Guangdong)—for central southern China was a vast and impassable forested mountain range inhabited by wild tribes (Austro-Asian Liau, p. 159). Thus, *in the west*, in Yunnan, the remarkable Tai kingdom of Tali or *Nandschau* (649–1253), which for centuries served as an often nearly equal rival to Tibet and China and as the commercial intermediary between India and East Asia; and *in the east*, along the coast, the *Yüa Kingdom* (since the 4th century BCE), which was superficially Tai-ized and even more superficially Sinicized. As early as the time of Christ's birth, it—along with its southern region, Nan-Yüä (Canton and Tongking, Annamite Vietnam)—had been more or less incorporated into the Chinese imperial confederation, even though its aspirations for independence have continued to this day (namely in Canton); indeed, the Sinicized Tongking (Annam) became an independent empire in 938 CE.

But when the Mongol crown prince Kublai Khan captured the *western strategic hub of Nanjing* for China in 1253, his vassal kings and knights once again swarmed southward on a conquering campaign, ruled as *the Shan* for centuries in *Burma* (until 1604) and besieged the Indian-Vedic *Khmer* Empire until it collapsed (1431) and the Mena Valley became *Thailand* = *Siam*. All that remains today is tiny Cambodia. Thus, the language of the once warlike Chu on the Yangtze is likely heard today in the stilt houses of Siamese villages—yet the ethnic types there remained Med-Sinid, while here they were Pal-Mongolid and Veddid.

From the eastern hub of Tongking, however, the South Sinic race also advanced step by step from the liberated pressure cell (938 CE) of the Red River Delta against the Indian-Weddid Empire of *Champa* (192–1471)—with an almost tragic regularity—and, by clearing one rice paddy after another, created what is now Annam (South Yüä = Vietnam).

But this also closed the *pincer movement* from the east *around the Khmer*, from whom the Annamites, in turn, wrested the Mekong Delta (Cochinchina) in the 18th century—and, as with almost every conquest in *the East* (not the West), not only linguistically and politically, but also *racially. The Mongoloid Eastern world has thus* —here just as in the north, in the Turanian steppes— ***massively expanded its original domain at the expense of the Europids.***

In the meantime, however, Sinic pressure had bypassed the overly narrow land routes to the south and brought all of Southeast Asia into the sphere of *Chinese colonization*. For two millennia, the *trade centers* have been located in the south; since their

the bazaars of Rangoon, Manila, Jakarta, Singapore, Bangkok, etc., have been in Chinese hands. *Java* is teeming with Chinese merchants, and the modern development *of Malaya* would be inconceivable without millions of Chinese coolies. Although these laborers usually return to their native clan communities toward the end of their lives, since they rarely bring wives with them, they exert a noticeable typological—that is, racial—influence through their mixed-race children who remain behind. This influence is generally highly valued: Chinese people are hardworking, thrifty, and intelligent; they treat native women well; and the mixed-race children are capable and attractive.

More recently, ancient military colonies in *southern Mongolia* have developed into farming settlements, and millions have immigrated to *Manchuria*, which had previously been sparsely populated. Here, too, the success of the Sinic races in quiet and tenacious colonization is enormous everywhere.

6. PALEO-MONGOLOID GLOBAL EXPANSION

In the face of this relentless flooding, overrunning, and overlaying of cultures, languages, and races toward the south of the Asian continent, however—a fact that has usually been completely overlooked—one must remain aware of one reality: *the respective stronger and more advanced cultures* —or their bearers —*conquer only the territories suited to their economic needs*, that is, usually the alluvial areas of valleys, coasts, basins, and depressions, not the mountains. These mountains lie as massive blocks between the drainage lines and, over the long term—and to an even greater extent the farther south one goes—preserve the ancient races and cultures; indeed, in many cases they have preserved them to this very day, even though our historical maps simply ignore this fact.

As early as the mountainous regions of southern China—and since at least the 3rd millennium B.C.— *the Palœ-Mongoloid contact group, with its Austroasiatic (Mon-Khmer) languages*, has thus stood in contrast to the ancient Yaospeaking Southern Sinids of the valleys and coasts. And even on the coast, the Hsia-min languages (Yao and Fujian dialects) have persisted to the present day. *Inland, however, there remain* in particular (1.) remnants of the Austroasiatic and originally Palæ-Mongolian *Liau* (or Wu-man). Their once-enormous distribution is evident from the Chinese annals; their distinct culture is revealed by prehistory and ethnology. — After 2000 BCE, the (2.) *Miao* (cattle herders) penetrated their territory (southern China) from the north as highland migrants, though not into their living space (cleared forests). They always lived to the southwest of the Chinese—first as the San-Miao on the Upper Huang He (Bamboo Annals), then as the Tjiang in Eastern Tibet, and finally as the Miao proper, who had become strongly Austro-Asiaticized, in Guizhou. It was not until 1775 that their last two kingdoms here capitulated to Chinese inland colonization, and large segments of their population migrated as nomads across the highlands as far as northern Hinterindien, where they are found in great numbers today. — For the same reasons, the southern Sinicized remnants of *the Yao*, the indigenous people of Yüä [*see p. 158*], had also been seeping into Hinterindien as early as the 13th century (3.).

This, combined with the simultaneous and increasingly intense waves of Chinese or Palæ-Mongoloid peoples of advanced civilization, resulted in the stratification of types that characterizes all of Southeast Asia today, and

cultures according to *economic strata*: the Middle-Sinic Miao practicing nomadism at altitudes above 1,000 m, the South-Sinic Yao engaged in livestock herding below 1,000 m, the Palaeomongoloid Liau or, further south, the Weddid Kha with slash-and-burn agriculture on the forested slopes, and in the wet valley floor, the rice-farming peoples of advanced civilization, namely the Sinic Chinese or Old Tai, or, further south, *the* Palaeomongoloid *Lao* (New Tai).

Finally, the fourth major "barbarian group" in the interior of China—which was always bypassed by the southern migrations—is the *Lolo* in the northwestern part of the region, where they still maintain a completely independent kingdom on the Daliang Mountains—an advanced civilization with a feudal system and its own script. Heavily intermingled with Europid elements from the Euro-Mongoloid contact zone, they migrated from Eastern Tibet into Yunnan and, linguistically, "Loloized" large segments of the local Paleo-Mongoloid Austroasiatic peoples there, even before some of these had been "Tai-ized" [*Nandschau, cf. p. 158*]. – Note how strongly language and race overlap here in every instance, and that cultural and linguistic incorporation by military means does not necessarily entail a change in race. In contrast, a quiet infiltration or even the occupation of unutilized economic areas very often brings about a radical change in racial type.

This central southern bloc of resistance against pressure from the north, as well as the diverse and intermingled ethnic and cultural strata of the peoples and tribes of the inner Hinterindian-Chinese mountainous region, had to struggle incessantly against Sinic pressure and Sinic disintegration, albeit to a lesser extent than the valley flanks on both sides. For throughout the millennia, *the internal Chinese colonization* worked tirelessly in quiet and tenacious waves, employing at times its most effective weapon—cultural assimilation—at times skillful administrative and economic maneuvers and restrictions, and at times even military force. The result of this is, above all, the now almost complete *destruction of the ancient Paleomongoloid Austro-Asiatic culture on Chinese soil*. In the course of these processes, a peripheral group was even *forced across into India [the Mundarians, see p. 151]*, while in the hinterland of India, in *the Burmese Shan region*, tribes such as the Palaung, Riang, and Wa held out in the north, and some remnants of *the Mon people* persisted in the south. The latter had been gradually pushed southward in our millennium by the Burmese proper in the Irrawaddy Valley; indeed, this forms no less a framework for the region's history here than, further east in the Myein Valley, the advance of the Tai-speaking peoples against the Khmer, and on the east coast, that of the Tonkinese against Champa.

In all this, however, *the true forest dwellers—the Kha* of the Tai-speaking peoples and *the Moi* of the Annamite-speaking peoples—were *bypassed* and have survived to this day as large, cohesive, and only marginally fragmented Paläo-Mongol-Weddic blocs. The Weddid inhabitants of the Mekong River valley —that is, Siam (Khmer)—who originally also spoke an Austroasiatic language, were linguistically "Tai-ized" beginning in the 13th century [*see p. 158*], and only the *Cambodians* survived as the last remnant of an Austroasiatic-Weddid high culture. The dense settlement of their rice-farming lowlands withstood all foreign encroachment but succumbed to the superior Austro-Asiatic—and later Tai—language and to the superior Indian intellectual culture. – It follows that *all the Weddid peoples of the Indian subcontinent lost their original language in the face of this onslaught*, just as did the Indian Weddid peoples [*cf. p. 132*].

However,*the influence of northern pressure on the Eastern Continent extends far* beyond it *into the Indonesian archipelago*; indeed, the intermingling of Paleomongoloids and Weddids becomes all the stronger here and leads to *the emergence of Malay culture.*

During the Neolithic period of the 3rd millennium BCE, northern China was essentially the domain of a so-called *"square-headed axe culture,"* while *the* Paleo-Mongoloid-Austroasiatic *region* of Hinterindia and southern China—that is, the southern forest belt—was the domain of a *"shoulder-headed axe culture."* Following the invention of bronze weapons and tools by the valley-dwelling peoples of the Chinese and Tai after the turn of the 2nd millennium, they gained a decisive advantage over the ancient forest regions, which had by then adopted the square-headed axe culture in the north. This marked the beginning of Sinic inland colonization, which got off to a flying start. This was followed by the southward exodus of the now completely vanished northern Chinese forest peoples; subsequently, the southern forest dwellers were also partially swept along. Thus, in the middle of the 2nd millennium, ancient Chinese, predominantly Paleomongoloid Austroasians with a square-axe culture advanced downstream, easily breaking through the shoulder-axe zone of the Austroasians of the Indian subcontinent — the prehistoric evidence is unequivocal — and immediately appear, uninfluenced, in Indonesia, where, as a more advanced culture, they culturally and linguistically assimilate the indigenous Weddid hunters and gatherers and drive them back into the interior of the islands. In this new territory, a brilliant further development begins: this marks the dawn of Malay culture and the Nesid type. Just as with the prehistoric period, the ethnic ties between the Proto-Liao and the Ancient Malays are numerous.

The subsequent Hinduization, followed by Islamization, did not significantly alter the racial profile. However, these processes carried forward the biodynamic momentum originating from what was now Indonesian soil: ancient Paläomongol-Weddid settlers moved eastward to Micronesia and perhaps South America, while more recent Hinduized settlers migrated to Southeast Hinter-India, where, from Song-Ba, the over-millennial empire of *Tchampa* [cf. p. 158] emerged, and in three great waves to *Madagascar*, where the rule of the Paläomongolid *Hova* in the central highlands had already been consolidated a millennium earlier.

On the *Japanese archipelago, however, the insular and continental currents converge: Paleomongolids* via Ryukyu and, carried by the Kuroshio Current, to Kyushu and South Korea from the south; and *Tungids* via the Korean Bridge to Hondo from the west—both only in the Late Neolithic (*Yayoi pottery*) and both initially only in the far south of the island chain: *the* coarse *Satsuma type* of the broad mass. Central Sinic, still Taiic, and Northern Sinic, never completely ceasing trickles of migration, follow whenever the continent is in turmoil: *the* refined *Choshio type* of the upper class. Therefore, the same applies to *Korea*: Tungo-Sinic north, Tungo-Palämongolid south.

From the Paläomongoloid Kyushu, a Kumasō ruler conquers the Tungid southern Hondo (Okayama or "founder" type) and marries its princess, thereby giving rise on February 11, 660 B.C., to *Yamato*, the cradle of the Japanese people and empire. *Its racial history is that of the gradual northward advance of the Europid inhabitants—the Ainu* [see p. 128] — who were *initially culturally equivalent to them*. As early as the Early Neolithic period, the Ainu had already occupied the empty island arc all the way to Korea (*Jomon pottery*). But after the Yamato people had masterfully copied Chinese culture from the 5th to the 7th century, their resistance gradually collapsed in the 9th century, a process that went hand in hand with massive racial mixing (*Aoshima type*). After centuries of rigorous isolation, the forced opening by the Americans (1854) ushered in a no less masterful imitation of European culture and, with it, a powerful industrial and biodynamic upswing. A corresponding mass pressure ensued. It manifested itself more in customer recruitment—using cannons if necessary—than in colonization, the paths to which were, moreover, blocked everywhere.

Thus, the Palämongolids had spread across the entire Asian archipelago and to the coastal regions of two oceans; they had reached the Inner Indies via Indonesia, South Korea, and Japan, and had been carried as far as Africa, Melanesia, and Micronesia, from where they may even have reached the Americas and, from the Darian Isthmus, its tropical zone: the Brasilids [= *Amazonids according to J. Imbelloni, p. 201*]. These are the final and truly global repercussions of the Tungid center of unrest.

7. THE INDO-MELANIDE STAGNATION

During warm interglacial periods, the tropical rainforest of South Asia, together with its savanna fringe, extended further northward and reached the west-east mountain range stretching from the Iranian plateaus to the southern

Chinese mountains. It goes without saying that the fauna followed, and the ancient large and medium-sized hominid forms (Gigantropus, Pithecanthropus, etc.) were all the more involved in this process since the Sino-Malay landmass (now fragmented into the Indonesian archipelago) still existed. Here in the south and *beyond the Himalayan mountain range lies, therefore, the area of differentiation for southern humanity*. In cooler or more arid climates, the Europids advanced from the north *in the west* across the Sahara and East Africa *[see p. 129 ff.]* and through Iran toward India, while *in the east* the Mongoloids advanced through the southern Chinese forest. In addition to the bioclimatic evidence, we have both prehistoric finds and recent relics in protected areas—both in regions that are today entirely populated by Europoids and Mongoloids, respectively.

In the course of these processes—that is, in the course of this southward displacement—the southern human population was consequently split into two major halves: Africa and Melanesia *[see H. Baumann, pp. 167 ff.; R. Biasutti, pp. 204 ff.]*. The further typological differentiation of the former took place in close connection with the formation of recent African regional units *[cf. pp. 115 ff.]*, while the typological differentiation of the latter reflects the ring-shaped containment of the eastern branch of Southern humanity by the somatic and linguistic contact forms of the Neo-Melanesians *[= Papuans according to R. Biasutti, p. 209]* through the highly primitive Paleo-Melanesians *[= Melanesians according to R. Biasutti, p. 209]* to the very archaic Australids *[cf. R. Biasutti, pp. 207 ff.]*. Of course, the eastern and western parts of the Southern Hominids are not directly related to one another in terms of descent; on the contrary, they represent local developments arising from local impulses. We must turn our attention to the biodynamics of the South Asian bridgeheads of the ancient circum-Indo-Oceanic arc of Southern Humanity.

The Indian region, with its access from the west, belongs to *the western wing* of these movements. It is a dead end, and where it lies farthest from the continental pressure center, the typological bridge pillars connecting the West and the East have been preserved—though only in dissolved, harmonized forms of contact. These are the two subgroups of the *Indomelanid variety*. Their biodynamic fate clearly reflects the current situation: 1. in the north (Kolider subtype), still cohesive as a retreating bloc in and on the forested mountain massif of Chota Nagpur (Munda, Santal), but now only trickling out as a sparse Paria layer in the Doab corridor, 2. in a few relic populations and pockets along the mountainous Western Ghats (Sora, Chenchu), but then again 3. as a cohesive population of 20 million behind the double forest barrier of the Deccan Plateau

, trickling out again into the Mysore pocket (Karnatid subtype). Here in South India lies the end of the world; further retreat is impossible. Thus, the Indomelanids lie in *a vast arc of retreat opposite* the northwestern gateway to India (the Khaiber and Bolan Passes) and have been pushed to all the edges of the great peninsula. This occurred first through the hunter-gatherer Weddids [*cf. p. 132*], namely from the bushlands, and then through the agricultural Indids [*cf. p. 132*], namely from the plains. Only then was the connection between Eastern and Western Negrids finally severed.

The prehistoric evidence is lacking, at least from an anthropological perspective. Admittedly, the *Paleolithic artifacts* of the Proto-Melanids are found throughout the peninsula—specifically, of course, in the savannas, not in the forests (later the domain of the Weddids) and not in the river valleys (later the domain of the Indids). There are also cave paintings (Raigar) similar to those of the Saharan contact Negrids, though (as a refuge area!) they are more sparse [cf. *K. J. Narr, p. 508*]. However, the only Proto-Melanide skulls found to date date back to the Stone-Bronze Age period (Aditannalur, Perambur) and are located in the heartland of the Indo-Melanides. The displacement is thus, for the time being, only cultural and, naturally, soon becomes historically evident in various ways. This applies particularly to the northern bloc, the primitive jungle tribes.

The heartland of the Indomelanides, however, is formed by the rich, arable alluvial plains of the south, where—in a splendidly sheltered location and at the outer limits of spatial possibilities—that *Tamil resistance bloc* developed, which came under Indid-Dravidian cultural influence quite early (from Mohenjo-daro, Sumer), from which it adopted the Dravidian language, but was later also increasingly—albeit superficially—culturally Aryanized. Typologically, this means an Indid-influenced upper class (Iyengar Brahmins), and culturally, Hindu religious elements superimposed on ancient Dravidian Nagatum.

However, the military failure against the highly intelligent and highly cultured southern population is already evident in the Aryan hero Rama's battle against the legendary *King Ravana* (from Dravidian *iravan = king), and Chandragupta (320 BCE), Asoka (273 BCE), etc., were not much more successful. Rather, as early as the dawn of history in the 1st millennium BCE, indigenous—that is, Melanide—shepherd tribes had established themselves as rulers over the richly cultivated Melanide plow farmers ("Kurumber"); later, the Kaller and Pallava (4th–8th centuries CE), and the Melanide-Tamil Chola world power (9th–13th centuries CE) completely precluded further attacks from the north. During times of turmoil in the north—such as the Hun invasions (5th–7th centuries CE)—this region, on the contrary, often served as a refuge and the center of Hindu intellectual life, bringing with it corresponding peaceful influences from the north. It was not until the later Muslim rulers, Alauddin (1311) and especially Aurangzeb (1636), that political powers from the north were successfully extended into the south. But neither the Aryan tradition nor Islam was able to completely overcome the many natural barriers. Melanide and Dravidian remnants remained everywhere. That it is inadmissible under these circumstances to speak of a "Dravidian *race*" was already noted on p. 133

. The Dravidian language is found in isolated regions across all biological types in India without exception. In the first centuries of our era, the Tamils gained a foothold in East Ceylon; the latter led them as laborers to Burma, Malaya, and South Africa.

8. THE NEGRITIC FRAGMENTS

Let us now turn to the *eastern wing* of these movements. The ancient southern hominid population east of India retreated southward across the Indonesian land bridges at the beginning of the Holocene, as the increased pressure from the relatively cultivated Paleomongoloids seeping downstream became apparent. The hunter-gatherer Weddids *[cf. p. 132 and W. Schmidt, p. 387]*, who drifted in from the west through the forests, evidently played a lesser role but intermingled with the Paläomongolids. The prehistoric evidence is recent, for the migrations are recent: Melanesian skulls from the Epipaleolithic Bacsonian culture of Pho-binh-gia, etc., in *Tonkin* and from shell mounds in *Malaya*, as well as the Goewa-Lawa find on Java and recent morphological influences there as an echo of this. All early Southern human populations are found near the coast, while the area of Paleomongoloid differentiation remains inland.

But prehistoric *Negrito skulls* also appear in Annam and show that the coexistence of tall and dwarf stature has existed since time immemorial in both southern hominid branches [*cf. the Bambutids of Central Africa: H. Baumann, p. 167 ff.*].

In the South Indian dead end and in the territorial conflict with the encroaching Weddids, proto-Negritid remnants were absorbed into the densely forested mountains of South India (Eastern Ghats, Anamalai) (Kurumber, Panyer, Kadr) and gave rise to the deep-skinned, tightly-curled *Malid contact form* of the southern Weddids. On the enchanting, remote Andaman archipelago—where they were greatly feared by Arab seafarers (cf. Marco Polo's account)—they remained virtually undisturbed until 1857, only to then die out rapidly, with their population now numbering barely 100. In the dense, moisture-drenched rainforests of the interior of *Malaia*, they formed small groups and intermingled with the local, most primitive Weddid people (Sakai), retreating with them into the most remote interior. Their numbers are small. In the *Philippines*, they are found on almost all islands, occasionally in relatively large, isolated remnant groups that are also significantly mixed with Palæ-Mongoloid peoples. In recent times, their proletarianization has been rapidly increasing. The influx of Europeans, the "civilization" of the ancient indigenous peoples, and the industrialization of the East have further accelerated this decline.

The hunter-gatherer Negritos—who are of a very high intellectual and ethical standing—are the last and weakest group in which global, tens-of-thousands-of-years-old biodynamic processes are coming to an end and playing out, processes that threaten to finally suffocate them in this century. Behind all the clamor of daily life, behind the hardships of war and cultural change, beyond the development of language, the founding of empires, and shifts in power, this process unfolds with the regularity dictated by nature. These processes lie behind all of history, shine through all of history, and play a part in the symphony of the many factors that shape history.

THE RACES OF AFRICA

BY HERMANN BAUMANN

The African continent is not merely the “black” continent, as it is popularly called after the “black” race, which is numerically predominant today. Not only is an ancient segment of humanity—the light-skinned Pygmies—embedded in its heart, the dense, rain-soaked Hyläa; but also at the edges of the dark-skinned Negroid region, bordering the neighboring continents and in the “blind spot” of the south, lie the areas inhabited by more or less lighter-skinned races, and in Little Africa, finally, the transition to Mediterranean Southern Europe is barely discernible at all. The racial types—geographical groups of people with similar hereditary physical characteristics—are arranged in belts, often strikingly tracing the zones of climate and vegetation. We owe the clear identification and classification of the main African varieties primarily to v. Eickstedt.

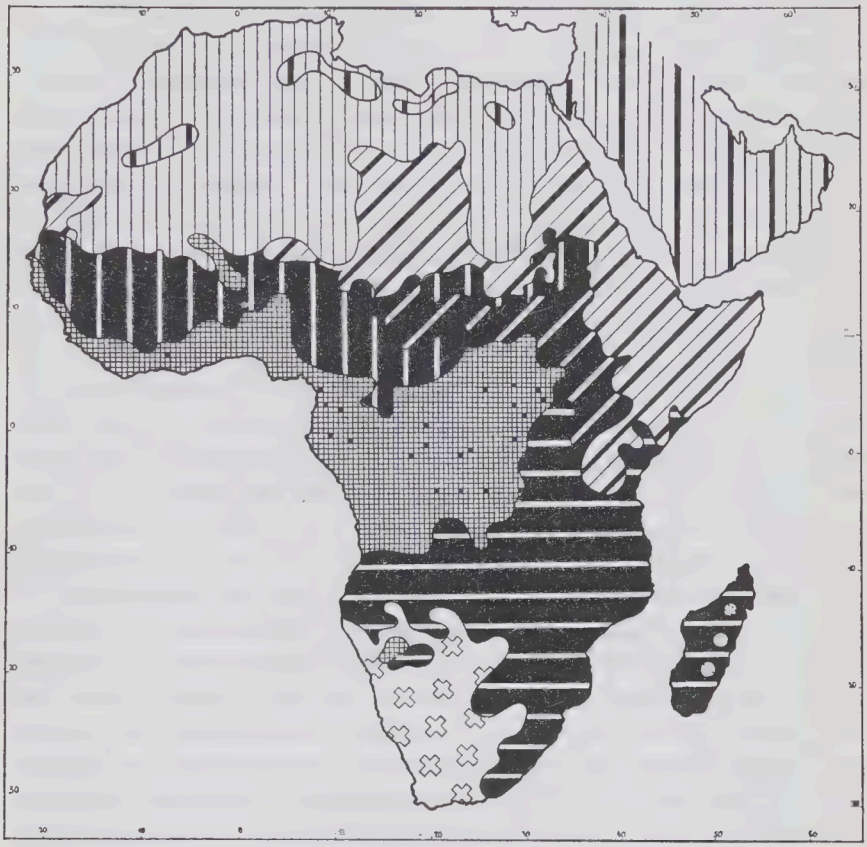
Let us begin with the core. In the heart of the rainforest, which stretches across parts of Upper Guinea, Lower Guinea, and the Congo Basin, live the remnants of an ancient African race—one for which we do not yet know of any precursors from Africa’s prehistory, but whose morphology clearly reveals its great age: the African *Pygmies*, or, as they are also called after their best-known subgroup (the Bambuti of the Ituri), the *Bambutids*. Known as the Bagielli, Bekwi, Babinga, Akka, Efe, Basua, etc., they inhabit the primeval forests of southern Cameroon, Gabon, French Equatorial Africa, and northern Congo. We know of mixed-race populations, more or less intermixed with Black Africans, such as the Batschwa (Congo Basin), the Batua on Lake Tanganyika, in the Kasai, and in Rwanda. They are all characterized by their strikingly short stature (140 cm for men, 135 cm for women, among those of pure descent), a long torso, short legs, and a large head with a medium to broad skull, large eyes, a large, broad nose, and a broad mouth with thin lips. Their light to yellowish-brown skin is wrinkled, and their “peppercorn” hair is curly, as in Black Africans. Dense body and facial hair may cover the body and face. General Negroid elements are thus certainly present, yet the distinctiveness of the race is unmistakable. The view that this represents a degenerative form of the Negroid race must be rejected. Rather, one could regard the African Pygmies as an ancient form of the Negrids, adapted to the jungle and

differentiated early on in the isolation that persisted until recent times. A kinship with the Khoisanids (Bushmen)—who are, at least today, relatively short in stature—which some have suggested, must be ruled out due to the many contrasting characteristics of body form. These two human groups are also markedly different in terms of racial physiology, as evidenced by their blood group ratios (Bushmen according to Pijper-Bar: *A*: 29.6; *B*: 7.5; *O*: 56.1; Ituri Pygmies according to Jadin: *A*: 30.34; *B*: 29.6; *O*: 30.62). Furthermore, the Pygmies of Africa constitute a well-defined ethnic unit in cultural terms [*see W. Schmidt, p. 387*], even though they have abandoned their own languages and adopted those of the tall Negro peoples living alongside them [*see W. Schmidt, p. 439*]. Race and culture still largely coincide here. Only a few groups have abandoned the ancient way of life of gatherers and hunters and exchanged their windbreak-like semi-dome or dome huts for permanent dwellings.

The Bushmen, already mentioned, together with the taller Hottentots, constitute the second surviving archaic race of Africa, now confined to South West Africa: the *Khoisanids*, whose two branches are represented by the modern Bushmen (San) and the Hottentots (Khoikhoi). The greater stature of *the Hottentots* and the Ethiopian racial traits exhibited by some of their leading groups seem to indicate that an Ethiopian element intermingled with the ancestors of the Bushmen. (Elements of language and culture, such as their way of life as cattle herders, and certain religious or mythical traits point to Northeast Africa!) The Bushmen, on the other hand, have largely preserved their racial type. Their short stature, which borders closely on that of the Pygmies, is in part truly a form of degeneration, since their ancestors (Strandlooper, Boskop Man, see below) were taller. Otherwise, they are characterized by the following features: leathery, yellow skin prone to wrinkling; peppercorn hair (Fil-Fil); a flat face with prominent cheekbones, which, together with the eye area—which, due to a not uncommon eyelid fold, takes on a Mongoloid appearance—gives the impression, among other things, that this is a member of the "yellow" major race. A striking lumbar lordosis and a tendency toward steatopygia (fatty buttocks) in women are evident in rock paintings and are still particularly noticeable today among the Hottentots.

The *Bushmen* are the remnants of an ancient race driven into the salt steppes and deserts (Namib) of South Africa, whose cultural achievements we can trace back to the Upper Paleolithic and as far north as Northeast and North Africa [*cf. K. J. Narr, p. 505 ff.*]. Rock paintings

PREDOMINANT HUMAN RACIAL TYPES IN AFRICA BEFORE THE SPREAD OF THE EUROPIDS



Berberide

Orientalide

Aethiopide

Sudanide

Nilotide

Kafride

Palaenegrids

Khoide and Sanide
Khoi,anide

Bambutide (African) Pygmide

and microlithic stone tools are index fossils of their ancestral lineage, whereas in the "Eurafrican steppe hunter culture" of Africa's salt and dry steppes, a slightly modified way of life—whose principal representatives are today's Bushmen—can still be observed even in the present day.

The vast majority of *Negrids*, who inhabit the primeval forests of Africa—including the Pygmies—as well as the humid and dry steppes, cannot yet be unambiguously divided into somatic subgroups from an anthropological perspective. The linguistic classification into Sudanic, Bantu, and Semibantu languages does not correspond to any racially distinct division that is already apparent today. Only the Nilotic subgroup can be associated with a distinctly characterized linguistic type. The average Negroid type exhibits a sturdy, medium build, brown to very dark skin color, pronounced prognathism, dolichocephaly, thick lips, and an exceptionally broad nose with a broad bridge.

Three subgroups appear to stand out more prominently to this day. First, there is the human type designated as *"Palenegrids"* or *the "jungle race,"* which is found in the rainforests of the equatorial core surrounding the Pygmies, with the following characteristics: a smaller, stocky build with a long torso and short legs; a very coarse, low-set face with a broad nose and lips that are not very thick; and a tendency toward a broad skull. Certain features point to a mixture of a medium-type Negro with Pygmy blood, as suggested by a comparison with typical Pygmy-Negro mixed-race forms found in the Ituri Forest. If this view—which also appears to be supported by ethnological observations (cultural elements of the "Hylaean culture" and those of the Pygmies are often difficult to distinguish!)— is confirmed, we would not be dealing with an ancient Negroid racial form—as the term "Palenegroids" implies—but rather with a contact form between Negroes and Pygmies. Second, the *Nilotics*: along the upper Nile and from there westward into central Sudan (Sara, the ancient "So," etc.), extending southward to the Ila and Kaffirs. The general Negroid type is so modified here that in some respects it clearly approaches the Ethiopian race, which adjoins it to the north and east. The body is very slender and tall (high shoulders, narrow pelvis, very long legs); the nose is narrow, the lips relatively thin, the prognathism less pronounced than among Negroes, but the skin color is quite dark. Whether this represents a genuine specialization of the Negroid race or a contact form with the Ethiopids has not yet been conclusively proven. From a linguistic and ethnological perspective, the latter would seem more likely. A "Nilotic" subtype of the

Negroid cultures, which must be regarded as a hybrid culture between the cattle-breeding Eastern Hamitic peoples and the ancient Negroid agriculturalists, and which is most clearly evident in the territory of the Nilotic race (certain forms of ancestor worship, mythology, weaponry, manure fertilization, etc.). This form of contact even seems to date back to the Neolithic period (Kenya, Nubia) and appears to have played a role in the spread of certain elements of advanced culture. Third, the *Sudanese*: v. Eickstedt identifies, particularly in Western Sudan, a highly specialized Negroid variety that exhibits all Negroid traits in a pronounced form, describing it as the "most Negroid of all Negroid types." Here, too, the ancient Negroid cultural traits—otherwise widespread across the entire African dry steppe—are found in a particularly acute and specialized form (e.g., the extended-family system based on dryland farming and its connection to a highly developed ancestor cult). It is possible that the strikingly pronounced farmstead economy of Western Sudan—described by Labouret, Tauxier, and others—which is so reminiscent of ancient European models—may be linked to an influx of early peoples from the north, since it is precisely here that repeated occurrences of Cro-Magnon (Berber) types have been identified, which are naturally associated with North Africa (Abel).

Whether other Negroid varieties can also be identified remains to be seen. The human type described by von Eickstedt, following Bory in 1825, as "Kafride"—which is said to predominate more in the south and east of the Negroid region—is, for the time being, still so vaguely outlined and so difficult for any traveler in Africa to distinguish from the rich variety of the Negroid race that it must be set aside here. Nevertheless, some Negroid element forms the basis of the Southeast Africans. In the realm of Rhodesian high culture—which, after all, overlays major parts of the Bantu region—the spread of another, little-noticed influence seems more evident: the ruling elites of the major states, from Maschonaland to Angola, are characterized by an almost Oriental-seeming bearing. This is particularly evident in the Luba-Lunda regions. Among the Lemba of Southern Rhodesia, a people with a strong Semitic cultural orientation still seems to represent this type in a very pure form. The Semitic-Arabic infiltration along the east coast and deep into the continent is becoming increasingly prominent and also appears to be linked, in a manner not yet fully understood, to the Rhodesian high culture.

The *Ethiopids* constitute the bulk of non-Negroid African peoples. They serve as transitional forms between "black" and

"white" humanity, from western Sudan to central East Africa. v. Eickstedt distinguishes the following subvarieties: the Western Ethiopids (Fulani, Moors, Tibbu, etc.), the Northern Ethiopids (e.g., the generally shorter-statured Bischarin), the Central Ethiopids (Somali, Galla, "Cushites" of Abyssinia), and the Southern Ethiopids (the extremely tall Hima and Maasai). In general, the Ethiopids are slender and tall, with long faces and long skulls, without prognathism, and with narrow, often high noses and prominent chins. In contrast, they have thick lips, curly hair, and dark skin color, which link them to the Negrids. Linguistically and culturally as well, they are well characterized in their core region (northeastern Africa) by the "Hamitic" language and the "Eastern Hamitic" cattle-herding culture. Deviations can be explained by specific historical events that will not be discussed here (for example, the Ful have a Sudanese lingua franca; the "North Hamitic" of the Berbers no longer corresponds to any racial component; the Hima have abandoned their language in favor of the idiom of the subjugated Bantu, etc.). The linguistic mixtures with the Nilotes (Hamit-Nilotes) are clearly accompanied by racial mixtures as well. The Ethiopids carried their racial type through East Africa as far as the south of the continent (with influences among the Kaffirs and Hottentots).

Finally, the Mediterranean and Orientalid races, which dominate North Africa, remain as distinctive racial types. The *Mediterraneans* are small in stature and slender, with wavy dark hair, slightly brownish skin, a long skull, and a narrow face—as we know them from Southern Europe—but darker. They have, among other things, experienced considerable Berberid influences in some areas due to the survival of Cro-Magnon-like forms. Among the Berbers of North Africa, one therefore finds tall individuals with broader faces and the typical eye features of the Cro-Magnon race [*cf. H. Vallois, p. 109 ff.*]. The *Orientalid* race is, of course, particularly noticeable where its leading ethnic group, the Arabs, has also shaped the physical characteristics of North Africa since the 7th century [*see S. Alcobé, p. 176*].

Thus, we also observe a constant intermingling and blending among the African races, so that we can often recognize only the extreme forms more clearly. A correlation with linguistic and cultural groupings and strata is sometimes only faintly discernible, most clearly among the non-Negroid races.

The races of the African continent, in their present-day forms, are only partially documented paleoanthropologically—that is, in *fossil skeletal material*—to a greater or lesser extent

associated with accompanying prehistoric cultural artifacts, to be traced back into the depths of time. What is most striking is that the Negroid races, in particular, have left so few prehistoric traces.

The oldest finds were reported in the article by J. Kälin [p. 91 ff.]. But even in the more recent prehistoric epochs, it seems as though the non-Negroid races occupied a far larger area than they do today [cf. H. Vallois, p. 110], and that the Negroid peoples were thus concentrated more in the forested west, a region poorly understood from a paleoanthropological perspective. Nevertheless, one must not fall into the error of regarding them as, so to speak, younger in the history of humankind. Africa has preserved the ancient human form of the Bambutids—who, despite all their distinctiveness, cannot deny their Negroid kinship—in the heart of the continent. Of course, this does not yet clarify their exact relationship to the Negrids, nor does it clarify the relationship of the latter to the so-called Eastern Negrids (Negritos, Melanesians, "Malids," and Melanides of India).

What, then, of the non-Negroid recentraces of Africa and their possible origins in prehistory? In their case, we can trace relatively continuous morphological series back to the Upper Paleolithic. This applies to the Khoisanids as well as to the Ethiopids and Berberids.

The numerous individuals found in the graves of Kenya and Tanganyika, whose origins can be traced back to the East African Paleolithic, must be regarded as representatives of a race that likely contributed to the formation of today's Ethiopids (Eastern and Southern Ethiopids). These are the regions where the Ethiopids still exert a dominant influence today. The *Oldoway* skeleton (Serengeti Steppe in East Africa), discovered by Reck in 1913, exhibits the tall stature, long skulls, narrow face with a narrow nose, and barely pronounced prognathism characteristic of modern-day Masai (Gieseler-Mollison). In neighboring Kenya to the north, the Man of *Elmenteita* (Leakey 1927/28) and Gamble's Cave correspond to this skeleton. In Elmenteita, the Negri influence is indeed noticeable. However, everything remains within the framework of an ancient Ethiopian race, which is associated here with the Epipaleolithic Elmenteitian culture [*cf. K. J. Narr, p. 505*], but also reappears with the same physical characteristics in younger archaeological layers (Neolithic) (Nakurru in the north; Engaruka and Ngorongoro in the south). The skull fragments from *Kanam* and *Kanjera*, which their discoverer Leakey found on the Gulf of Kavirondo and dated very far back, likely belong only to the so-called "Middle Stone Age" [*cf. K. J. Narr, p. 507*] and likewise exhibit non-Negroid features [*cf. J. Kälin, p. 86*]. Naturally, finds of the Ethiopian type become more numerous in the Neolithic period. In Nubian graves at Aniba in the Nile Valley, dating to around 2500 B.C., we encounter skulls whose hyperleptosomic and dolichocephalic appearance seems to be directly linked to the Olduvai forms.

The Khoisanids—if we disregard the Ethiopian influence among the Hottentots—apparently derive, to a decisive extent, from those prehistoric human varieties characterized by the prehistoric *Boskop race*, which are found in various locations throughout the entire region that, based on ethnological evidence, we must also regard as the peripheral area of the immediate predecessors of the modern Bushmen. The human specimen found at Boskop (near Potschefstroom in the Transvaal) exhibits a long skull, an orthognathic face, and a considerable brain capacity (1,830 ccm). Some features point to Cro-Magnon, while others point to the modern Khoisan race. It is noteworthy, however, that this Boskop human was in any case taller than the modern-day Bushman. Culturally, he appears to have belonged to the Upper Paleolithic period. But just as these cultural traits were preserved among the ancestors of the Bushmen in the Wilton and Smithfield cultures well into modern times, so too were the Boskop racial traits, which cannot be denied, for example, when examining the skeletons of the ancient Bushman "*Strandloopers*." These Strandloopers were found in graves not far from

Another site where Boskop-like skeletal material was found is Tzitzikama near Port Elizabeth. Further Boskop finds include: Springbok Flats, northeast of Victoria; the Matjes River (Knysna); and Fishoek, south of Cape Town.

It is difficult to say what the story is behind the rather archaic, australiform skulls from Cape Flats and Florisbad. The only certainty is that these australiform traits are also repeatedly reported in South Africa among recent Khoisanids, and even among the Bantu *[cf. S. Alcobé, p. 184]*.

There is also no shortage of prehistoric representatives who could be described as precursors of today's North African recent races. Setting aside the Mediterranean and, in some cases, already Ethiopian-like predynastic Egyptians, we have above all those racial forms that contributed to the development of essential somatic traits of the Berber people. Here we wish to mention, first and foremost, the finds attributable to the Capsian and Oranian periods *[cf. H. Vallois, p. 104 ff.]*.

This brief examination thus shows us the continued existence of important prehistoric races in the modern races that appear to have developed from them. It is noteworthy, however, that we are able to prove this only in the case of the non-Negroid races. The prehistory of the Negroid major race remains largely obscure, and even more so that of the form which, for many reasons, is designated as the African proto- and ancient race—the Pygmy race. Beyond morphological and cultural evidence, this race, too, can tell us nothing about its prehistoric past.

THE BIODYNAMICS OF THE AFRICAN CONTINENT

BY SANTIAGO ALCOBÉ Y NOGUER

1. INTRODUCTION

AFRICA is a continent of contrasting cultures and races. Unfortunately, however, in many areas we lack more precise knowledge even regarding the distribution of individual local human forms, and all too often we also lack reliable information about historical mass migrations and contacts. Thus, in certain cases, one is forced to rely on conjecture, in which the opinions of experts inevitably diverge from time to time. The reader should remain aware of this.

2. THE EUROPEAN-TYPE POPULATIONS OF NORTH AFRICA

The broad and fertile coastal strip of North Africa, situated between the sea and the desert, forms a natural corridor for population movements. Here, the population has always been predominantly Europid, as evidenced by prehistoric human remains: the finds from *Afalou-bou-Rhoummel* and *Mechta-el-Arbi* [cf. *H. Vallois, p. 104 ff.*], which initially contained more Aurignacian-like elements and later almost exclusively Cro-Magnon-like elements, have been joined more recently by the finds from Dar-es-Soltan on the Moroccan coast. The Neolithic populations, however, were already predominantly Mediterranean in appearance, and these younger populations began to penetrate ever deeper into the Sahara, whether as Mediterranean peoples in the east or Berber peoples in the west. It is therefore entirely justified to refer to the whole of North Africa as trans-Mediterranean Europe. In fact, it was the Arabs and Islam that first severed it from the ancient unity of the “Mediterranean consciousness” and from Christian Europe.

In Egypt, the Early Neolithic Fayum culture reveals Mediterranean populations without any trace of Negroid influences. They have even been directly credited with the Mediterraneanization of Spain and southern France and with the spread of Neolithic culture (Childe and many others). With the arrival of the Arabs in the 7th century, the Orientalid element apparently became more prominent in the cities, yet the resident rural population remained, for the most part, Mediterranean-Berberid. Its occasional Negroid influences are primarily attributable to the historically vibrant slave trade. However, the dominance of the South with its Ethiopian pharaohs no longer meant

than a temporary fluctuation. According to archaeological evidence, this pattern also applies to nearby oases such as Kharga, but it changes abruptly with the introduction of the camel, after which the major caravan stops rapidly underwent significant Negroidization (Hrdlička, Coon).

However, the rest of North Africa also exhibits a similar typological dynamic to that of Egypt: stronger Neolithic Mediterraneanization along the coasts, Berber-type populations in the interior, and sporadic Ngridization with the intensification of the slave trade. The Berber population undoubtedly stems from the aforementioned Capsian-period Mehta type of the Croma-gnids *[cf. H. Vallois, p. 104 ff., v. Eickstedt, p. 119]*. The Arab writer ʻAbd-al-Rahmān Ibn Khaldun (1332–1406) reports on the later typological classification and social division of *the Berbers*. According to him, they were also responsible for the introduction of the camel, which fundamentally altered the living conditions of the population in the desert fringe regions: the Berberid element penetrated deep into the desert during the Vandal and Byzantine periods. However, individual oases in the Libyan Desert still exhibit distinctly Mediterraneanid characteristics (Puccioni). The Phoenicians, Greeks, and Romans left virtually no traces, unless the occasional Aramean types are attributed to them. There are also isolated Alpine influences (the Djerba type according to Collignon).

The second wave of *Arabs* in the 11th century exerted the strongest influence in the steppe regions near the desert (Beni-Hillal and Beni-Soleïm). Since then, vast areas of the Saharan steppe have become Orientalid. However, the Berbers there also adopted the Arabic language and Orientalid traits in many cases, such as the originally nomadic Zenata. Under subsequent pressure from the Almohads, the Berber Senhadja state collapsed, causing the ancient Berber mountain regions to be encircled from the east, both to the north and to the south. In addition, however, the Eurafricanids—a subgroup of the Mediterraneids with a taller and more robust skeletal structure—can be found throughout the North African coastal regions; they have also been present on the Iberian Peninsula since prehistoric times (Alcobé).

Finally, the *blond people of North Africa* have given rise to various controversies. v. Eickstedt is of the opinion that this was a process “that affected, within the circle of Europid differentiation, all those forms whose genetic responsiveness and geographical habitat fulfilled the necessary biological prerequisites”—in other words, human glacial relicts, so to speak *[cf. v. Eickstedt, p. 126]*. The Vandals brought several additional—and this time truly Northern European—blond elements to the Algerian coastal regions.

It should not be entirely overlooked that there are certain *Jewish influences* in North Africa. These date back to the earliest times—at least to the Phoenician era—and introduced Armenian and Armenian-Oriental elements. In the Middle Ages, there were even nomadic Jews or Judaized Berbers who founded a small state in the desert. This wave also reached the Iberian Peninsula, only to flow back from there after 1492—along with the predominantly Berber-influenced Arabs—to North Africa, the Balkans, and the Orient. Today, North African Jews have, for the most part, been assimilated into Islam, both religiously and culturally.

3. THE ETHIOPIDS AND THE SAHARA

Northeast Africa is the range of the Ethiopids *[cf. H. Baumann, p. 171 ff.]*, who, from their core region—the Abyssinian Highlands—send distinct groups both northward toward Egypt and southward across the East African Highlands, extending far into the vast Saharan region. The systematic classification of *the Ethiopids* is controversial. They are regarded as an archaic form of the Mediterraneids (G. Sergi, E. Smith), but also as a mixture of Europid and Negroid racial elements (Stratz, Coon), and finally as a contact race (Biasutti, v. Eickstedt, Vallois). They do indeed combine Europoid proportions with Negroid physical characteristics, which do not segregate in a Mendelian manner—as is the case with mulattoes. In addition, there are also non-racial Negroid influences, particularly in the south, and Europoid influences in the north, and their clearly Mendelian behavior and segregation demonstrate that the Ethiopids constitute an independent, distinct variety—an ancient intermediate form between Black and White.

However, similar distinct contact forms can be observed throughout the entire Sahara, as v. Eickstedt recently demonstrated. In this context, the highlands—such as the Tibesti Highlands with the Tebu and the southern Ahaggar Mountains with the ancient Gober Kingdom in the Aïr and the more recent Hausa—still serve as refuges for the Ethiopids; and finally, even near the west coast, there are groups such as the Fulani and Mauritanians, whose connections to the Ethiopians of Northeast Africa have long been recognized (Montandon, Vallois). Most interesting, however, is that from classical antiquity through modern times, Ethiopianid remnants are also known on the northeastern edge of the Sahara (Melanogätuler, Leukäthiopier; Sallust, Corippus, Collignon, Bertholon). Here, too, these must be clearly distinguished from the recent Negroid influences brought by Sudanese slaves (Gautier). These circumstances have led v. Eickstedt to speak of an ancient transcontinental Ethiopian racial belt.

The gradual *drying up* of the Sahara has evidently had major biological and biodynamic consequences. It was this process that led to the isolation of the Saharan Ethiopianid remnants known today. After all, during the Pluvial period, almost the entire area of the Sahara was relatively densely populated by hunter-gatherer peoples, as evidenced by the extensive finds of stone tools on the shores of former lakes and streams (today's wadis). The climate change occurred in stages, and the period from the 5th to the 1st millennium can still be considered climatically favorable (Vaufrey). During the Late Neolithic, the hunter-gatherer culture was replaced by a pastoral culture. At the same time, the area of fertile land decreased noticeably and increasingly fragmented into scattered settlements, between which vast and arid wastelands stretched out. What remained were fossilized riverbeds and pluvial relics, as well as steppes in the peripheral regions. In the east, however, in the Egyptian or Libyan Desert—which was a relatively dry region even during the Pluvial—not even the most modest nomads can make a living today. These changes and processes are a clear indication that the ancient Sahara holds extraordinary biodynamic significance. Once relatively densely populated, now extraordinarily sparsely populated—this raises the question of where the ancient inhabitants have gone.

The migration northward toward Egypt has already been discussed elsewhere (see p. 177). However, migration was also possible toward the south or southeast, namely across the East African highlands. While this led, on the one hand, to the settlement of the Nile Valley and to the occasional penetration of Ethiopian elements into the ancient Egyptian kingdoms and dynasties, it also pushed Ethiopian elements into and among the Negro tribes of Sudan. This trend can be traced into more recent times, when the north had long been closed off by advanced civilizations and its peoples were themselves forced to migrate elsewhere. For the advance of the Phoenicians and Vandals, the spread of Christianity, and then the Arabs with Islam repeatedly set segments of the population in motion toward the south. The *introduction of the camel* —actually the dromedary—during the Roman era was of extraordinary significance in this regard. Suddenly, distant regions became accessible and habitable. A new, true age of nomads began in the Sahara, the anthropodynamic impact of which should not be underestimated.

Thus, the broad front of the ancient Ethiopids stretching across the Sahara—which had already been severely fragmented by climatic influences—was often heavily pressured from the north. Their main group apparently retreated into the central high mountains of Tibesti. The Ethiopids

Outer bastions, such as the oasis of Kufra, were conquered in historical times by the Senussi Arabs, and their remnants were intermixed with Berber and Oriental populations. The pressure continued southward toward Negroid Sudan, where Ethiopian Tebu tribes established new dominions and, in Kanem and Bornu, became more or less heavily Negroidized. In the central distribution area of the Tibesti, an older Paleosaharan type (Biasutti) and certain variant or local types have already been identified (Sabatini), but their actual core group remains largely unknown from an anthropological perspective.

The more recent anthropodynamics of the Western Sahara, in particular, as they began in the Age of the Camel, become especially evident when considering the *Tuareg*. Their main territory today lies in the mountainous Hoggar region, but as early as the Middle Ages they had already expanded southward into the Aïr (Gober) and, soon after, as far as the Bend of the Niger (Timbuktu). The Tuareg are exceptionally skilled camel riders and are known as both courageous and cunning warriors and raiders. In this way, they drove a wedge of predominantly Europid types between the central and western Sahara. Among them there are three racially distinct classes: the predominantly Eurafricanid nobility, or Imoschag; the predominantly Berberid vassals, or Imrad; and the slaves, who are partly Ethiopid and partly genuine Sudano-Negroid, or Iravellan. v. Eickstedt has demonstrated the connection between the Ethiopian lower class and the Ethiopian bearers of the Kingdom of Gober, the remains of which had been overlaid. The Berberid vassals are likely attributable to the earliest pre-Roman incursion of Berberids, whose southward migration can likewise be traced through ancient and modern tribal names, etc. Finally, the Imoschag are likely to be attributed to historically and archaeologically verifiable invaders from primarily Numidia. They belong to a type that is sometimes described as "Eurafricanid" (Alcobé), sometimes as the "Targid social type" (v. Eickstedt), sometimes as a "specialized" "Mediterraneanid" type (Coon), or as a Saharan subrace (Vallois). However, the same combination of characteristics is consistently and unambiguously identified from various perspectives.

Nevertheless, numerous instances of intermixing occur among the three "castes." The nobility, the Imoschag, are the least affected by this. S. Sergi recently demonstrated their physical ties to the upper class of the ancient Garamantes in Fezzan and the ties of the vassals to the lower class of the Garamantes. The same dynamic—that is, Berberids over Ethiopids, then Eurafricanids over Berberids—was thus at work in both the north-central and northwestern Saharan regions.

In the far west, however, the *Mauritanians*, like the Fulani, exhibit a

much lighter skin and other distinctive features compared to the Central Saharan Ethiopids, which is why they were classified as a West-Ethiopid subform. This has been demonstrated among the Izargi and Uled-Tidrarin tribes, as well as the Uled-Delim, who are, however, already darker. This complex likely includes the Leucaethiopids of antiquity, who at that time lived much further north. It is known that, in historical times, there were incursions by North African populations, predominantly of Berber origin. It is also revealing to examine the distribution of blood groups among the Mauritanian populations: the Tuareg closely align with the actual North African populations, whereas the Mauritanians align more closely with the true Negroes. Thus, here too, the Ethiopids demonstrate their racially intermediate position.

But that is not the whole story. Many uncertainties regarding the origin and biodynamics of the Saharan peoples still await clarification. Only this much is certain: we cannot resolve this question without considering the dynamics across the rest of the African continent, particularly those of the East African highlands, which constituted the only southern escape route for the inhabitants of the drying-up areas of the Saharan lowlands north and south of the central mountain ranges.

4. CONTACT AND RESISTANCE IN THE SUDANESE ZONE

Let us first turn our attention to Sudan proper. Here, the circumstances are in some respects highly complex, and anthropology does not yet have sufficient material in all areas to clearly distinguish, from the mass of the Sudanic variety [cf. H. Baumann, p. 171], the tribal or clan types, as well as the mixtures and overlaps. Major shifts have taken place here right up to modern times, the details of which are not fully known. It is, however, readily understandable that the Ethiopids, who were subjected to pressure from the Eurafricanids and Berberids, in turn pushed the Sudanic population of the savanna regions ever further toward the jungle and the coast. In the process, the older and more primitive Palenegrids were driven into the mountains, forests, and swamps; indeed, even remnants of the Pygmids were forced into the densest primeval forests. In addition, waves of Western and Central Ethiopids—historically clearly identifiable with the founding of the Ful and Hausa empires—eventually swept over and overlaid the aforementioned groups.

We know, particularly from Arabic sources, that powerful empires were already being established in Sudan as early as the Middle Ages. We cannot go into detail here, but must limit ourselves to a brief and general discussion. The origin of the core type of the Negrids—namely, the *Sudanic variety*—cannot be traced with precision. The one-

The only prehistoric find from an earlier period is that of *Asselar [cf. H. Vallois, p. 110]*. Although this find clearly points in the Negroid direction, it cannot be described as Sudanoid, but at most as Proto-Sudanoid. This would suggest a very late emergence of the Sudanoid type. Moreover, it is not located in the actual Sudanoid region, but in an area that is now completely arid but was once savanna-like. Furthermore, it shows unmistakable resemblances to the Boskopid race, which we must assume was once widespread in parts of the Sahara and represents one of the basic types of the Khoisanids [*see H. Baumann, p. 168*], who are found today only in the southernmost part of Africa.

Among the numerous local types and tribal forms between Senegal and Kordofan, the Sudanoids are particularly well-defined among the Wolof—the blackest of the Negrids!—and then among the Malinké and Bámbara in western Sudan. Toward the Guinean coast, however, there are increasing Palänegrid influences, which are most common in the forests of the Guinean coast. These Palanegrids of Guinea are not quite as robustly built as those of the Congo Basin; for this reason, Vallois classifies them as a Guinean subrace of the Palanegrids, as they are particularly represented among the Kissi, Toma, Yoruba, and Ashanti. Here, and also among the Kru in Liberia, the layering is particularly evident: the lower layer is Palanegrid, the upper layer Sudanid (Routil). Thus, across the entire breadth of the Sudan, one can clearly trace the wave-like stratification of the Sudanid resistance block—sweeping in from the north and crisscrossing the region—and its continued spread across the coastal populations, regardless of the many local groups, relict islands, mixtures, and harmonizations that occur in individual cases.

Particularly fascinating in these movements is the position of *the Hausa*. Their current heartland is Sokoto, east of the Niger River, with the capital Kano in northern Nigeria. However, they do not form a single ethnic group. Rather, they are scattered throughout Sudan as traders and become increasingly "Negroized" the further south they go. It is generally known in Sudan and established in their traditions that they are descended from the people of the ancient Kingdom of Gober, which we already mentioned in connection with the advance of the Tuareg. Gober, however, was a kingdom of the Central Ethiopids; therefore, the Irawellan slaves of the Tuareg [*cf. p. 179*] and the northern, less mixed Hausa share the same physical type, namely that of the Central Ethiopids. von Eickstedt, who demonstrated this, groups them together with the similarly built Tebu into a Tebu-Hausa bloc. In Sudan, they were Islamized no earlier than the 14th century and went on to found significant kingdoms there, such as those of the Sonrhai and Ragirmi,

including the southern Nupe, only to be scattered by the nomadic Fulani under the pretext of an ascetic Islamic reform in the early 19th century. Yet their commercial, intellectual, and physical influence remains highly significant throughout central Sudan.

Just as the ancient Ethiopian-like population of the Air was displaced here, the *Ful(be)*, who inhabited the Adrar region—located somewhat further to the west—were pushed southward and scattered. Their Ethiopian connections were also recognized early on, but it was not until modern times that Western scholarship came to understand what had long been handed down by their traditions and by the Arab scholars of Sudan: that they originated as nomadic tribes of Adrar from the western tip of the Southern Sahara and were driven out as a result of desertification. Among them, too, the farther south we go, the more we find the same Africanization as among the Hausa, and we also encounter them as early conquerors in western Sudanese regions and as the founders of great empires such as Futa Djallon. But their distinctly lighter physical type sets them apart from the Hausa and shows that they are of the same physical stock—the West Saharan Ethiopian type—found among the Mauritanians. Moreover, they maintained their nomadic way of life far more tenaciously than the more highly civilized Gober-Hausa, thereby gaining a strength that enabled their cavalry to eventually conquer and exert influence over half of Sudan. Thus, they reached as far as Cameroon. Their physical influence is evident in many cases among the upper classes. The apparently purest Fulani groups are still found today in Futa Djallon, particularly in the higher and healthier regions where the tsetse fly poses less of a threat to their livestock (Pales). Thus, isolated inbred groups have persisted here.

No less interesting than the typological dynamics in the East and West are those of *central Sudan*. But they are even more complex and, moreover, have been little studied. Naturally, the offshoots of eastern and western movements are also found here, along with indirect Europid influences from Berber sources, which spread from the north in more recent times. After all, the vast expanses of the Sahel along the Niger Bend present no less of an incentive for migration and conquest than the most significant North Sudanese capital since time immemorial, the salt-rich Timbuktu. Thus, the upper class here also shifted from Europid to Negroid or vice versa. An upper class—and possibly even the general population—that was likely predominantly Berber was replaced around 1000 CE by the counter-attacking Sudanese Soninke, who were later driven out by the predominantly Berber Senhaja (the feared Almoravids of the

History). Then, around 1500 CE, the immensely mixed but predominantly Negroid Songhai emerged, founding an empire. They were soon driven out by an army—the so-called Arma—from Morocco, consisting of Berbers, Arabs, and Andalusians, and a "white" ruling class emerged once again, which gradually became Negroidized. Moreover, both old and new Arab influences penetrated from the east along the southern edge of the Sahara with varying intensity and had a more or less significant physical impact. This explains why the peoples along the northern edge of Sudan represent an extraordinarily diverse mix of physical types. The dynamics of these racial types have never come to a standstill here; the lulls were never long enough to allow for the formation of inbred groups or isolated populations. Only a few fishing tribes and jungle groups are exceptions. French researchers have recently been striving to shed light on this matter.

Further to the east—that is, east of Chad—yet another new racial element appears: the very dark-skinned and tall *Nilotic peoples* [see *H. Baumann, p. 170 ff.*]. They are found among the Sara in the Shari Basin and as far as the Nuba in Kordofan, but are most concentrated among the tribes of the Upper Nile region—the well-known Dinka, Nuër, Shilluk, and Bari. They are originally an adaptive and isolated group from water-rich tropical grasslands; from there they spread as far as the eastern shore of Lake Victoria, where they form the predominant ethnic element of the Kavirondo and Wagaya. Numerous border conflicts over the centuries have led to connections with the Ethiopids, such as the Maasai, Galla, and Hima, so that, from a cultural perspective, they are referred to as Hamito-Nilotics (Johnston, Czekanowski). But there were also multiple types of interconnections with the Palänegrids toward the Congo and Lake Albert. Nevertheless, given a clear economic and ethnographic connection to a typical and relatively isolated habitat, the fragmentation and, in particular, the stratification here are by no means as pronounced as in Sudan.

5. THE KHOISANID EXODUS AND THE OCCUPATION OF THE RAINFOREST

In the east of the African continent, the East African Highlands lie between two massive rift valleys. Across vast, steppe-like plateaus, they extend toward the southern part of the continent, which is otherwise covered throughout its tropical region by dense primeval forest and poses a major obstacle to any kind of movement or migration. The East African High Route of the Peoples—the *"Ethiopid High Route,"* as v. Eickstedt calls it—is thus the decisive biodynamic factor

for the entire anthropodynamics of the African continent proper.

This becomes all the more evident when we consider the biodynamic impact of the Sahara's desertification, which has a gateway to the highlands in the western foothills of Abyssinia. For this reason, the oldest prehistoric racial remains in this region are of particular interest. They exhibit *Khoisan-like or Boskopid traits*. These have also been found among prehistoric Nubians (Menghin, Seligman) and ancient Egyptians (Haddon, Biasutti), and we have already mentioned Asselar. In addition, Bushman-like paintings are widespread throughout the northern and eastern Sahara and are also found in East Africa; in more recent times, of course, they have also been found in South Africa [*cf. K. J. Narr, p. 506*]. According to Arab accounts, it is likely that Bushman-like populations lived as far north as the Zambezi River until about 1,000 years ago. In East Africa proper, we find the Kindiga and Sandawe tribes, who speak Bushman-like languages with "clicks" and exhibit unmistakable Khoisanid traits. Thus, Bushman-like or Boskopid populations likely rank among the oldest Homo sapiens settlers in Upper East Africa. Today, however, they have been driven back into the most desolate steppes of the Kalahari periphery and have been terribly decimated in the process.

Which races displaced them? The Ethiopids, Negrids, and Europids come into question. The *Ethiopids*—more precisely, the southern branch of the Eastern Ethiopids—are already evident at several prehistoric sites [*see H. Baumann, p. 173*]. With their pastoral culture, they were superior to the hunter-gatherer Khoisanids. But the proliferating Negrids also seeped in from the jungle fringe areas into the well-trodden path of the peoples, and everything turned southward and thus against the Khoisanids. This gave rise to the considerable mixture of types in East and South Africa, which, as a result of economic and tribal segregation, is still clearly recognizable in many cases and appears to be sharply demarcated from one another in a compartmentalized manner. But it also led to numerous clashes and cross-migrations among the various invaders themselves, and as wave after wave of warring invaders rolled southward, numerous contacts and intermixings occurred.

Thus, south of Kenya today, a *Negroid base* can be observed that is more or less mixed with Ethiopids and Khoisanids, or both. Linguistically, most of these composite populations belong to the Bantu peoples. Among these, for example, the Tonga have been present in Portuguese Mozambique since the 16th century

(Junod), whereas the Zulu—who are now settled further south (that is, the tribes of the large Ngoni group residing in Natal)—did not arrive there until later. The Tswana in central South Africa, however, were constantly subject to processes of fragmentation. Thus, the Basuto (the southern Sotho) settled in the hinterland of the Ngoni and, in some places, superseded the Khoisan-speaking Hottentots. The pastoral Herero, however, migrated westward across the southern tip of Africa as far as the Kunene. Both they and the Zulu still very clearly reveal their northeastern origins in their physical features through a tribal variation in Ethiopianid influence, and occasionally even through distinct Ethiopianid tribal characteristics.

But then came the *Europid counteroffensive* from the south. Beginning in the late 17th century, Dutch colonization (starting in 1672) first pushed the Hottentots, then the Bushmen, and finally the Bantu peoples back northward and into conflict with one another, resulting in numerous battles and migrations among all the groups involved. The Wangoni even retreated as far as East Africa, the Boers trekked far to the north, and English colonial settlers followed. This led to many extraordinarily bloody battles. In the process, the weakest—the constantly hounded and decimated hunter-gatherer Bushmen, as well as large segments of the Hottentots—were driven into the desert-like regions of the Kalahari and its outlying areas and, so to speak, confined there. Occasionally, mixed populations emerged between Europeans and Hottentots, as in the case of the well-known Rehoboth Bastards, whose genetic makeup was studied by E. Fischer.

To what extent one can even speak of a distinct *Kaffir variety* among the Negroid Bantu peoples must be left open for the time being *[cf. H. Baumann, p. 171]*. The fact that a different type exists than in the Sudan was already known to Europeans in the 16th century, when “Kaffer” and “Negro” denoted two distinct types. Even von Eickstedt himself notes that the Kaffrid type has not attained a very high degree of Negroid specialization. For our present purpose, it may therefore suffice to emphasize that at the base of the Bantu peoples and at the base of the entire East and South African polymorphism lies a genuine Negroid element, which has been designated as Kaffir or Kafrid since ancient times. The Ethiopian and Khoisan components can be easily distinguished from it.

Lebzelter and Dart, complementing one another, also draw attention to the *Orientalid influences* —merely influences—which are due in particular to the quite strong Arab influences, the establishment of sultanates since the 10th century, and the many trading colonies and slave hunters. In addition, however, Mongoloid-like influences are also present, which must not be confused with Khoisan admixtures, and whose nature (whether a phenomenon of convergence or an external influence) remains uncertain. Finally, reference is made to an australiform element, which is also attested prehistorically, for example, by the Cape Flats skull [*see H. Baumann, p. 174*]. It likely originates from an ancient, ubiquitous evolutionary lineage (such as our Aurignacids and Australids) [*see E. v. Eickstedt, p. 119*].

While it is now possible to classify the typological groups of individual populations quite satisfactorily, there is certainly still much to be researched in detail.

The following should be briefly noted regarding the island *of Madagascar*. Repeated waves of immigration by seafaring Malays, primarily from Sumatra, about a thousand years ago have partially and considerably intermixed a originally very sparse Negroid population with Palæmongoloid features. This applies particularly to the upper classes. Thus, the population of this island acquired a rather distinctive character. Some have even [*cf. E. v. Eickstedt, p. 161*] suspected Melanid and Melanesid [*cf. R. Biasutti, p. 209*] influences (Grandidier), but this does not yet appear to be sufficiently substantiated. Undoubtedly, however, the Indians in the north and east of the island have exerted a certain influence in more recent times, which—in physical terms—has remained smaller than one might assume given the high immigration figures, due to the system of caste segregation. The same applies in the recent past to the numerous Indian immigrants on the South African continent.

Finally, mention must be made of the regions comprising the central Congo Rainforest and its surroundings, the Hyläa. In its densest recesses, numerous remnants of a remarkable dwarf form of the Negrids—the pygmy-like *Bambutids* [cf. *H. Baumann, p. 167 ff.*]—still live today. They are the only African human group to have adapted completely, both physically and culturally, to life in the primeval forest. Their range is thought to have once extended much farther north than it does today. After all, they were well known to the ancient Egyptians in the third millennium B.C.E. However, the dynamic processes described above in northern East Africa have pushed them far to the south, so that their northernmost remnant today lies not in the east but in the west, in the remaining forest islands of the Cameroon Steppe, and thus far beyond the boundary of the contiguous primeval forest (Vallois).

As a result of social symbiosis with neighboring Negroid peoples, certain signs of contact have emerged, but true intermixing has occurred only relatively rarely. After all, the Negroes are distinctly agricultural peoples who, upon penetrating the primeval forest, erected their village huts only in the midst of cleared, burned-down areas, whereas the Pygmies, as undemanding and cheerful hunter-gatherers, hunt their prey—even elephants—in small groups beneath the lush canopy of the giant trees. Thus, there are still many racially pure Pygmies today, especially in the Ituri Basin (Czekanowski, Schebesta, Gusinde). When intermarriage occurs here, it is the Negroes who take Pygmy wives, not the other way around, since Negro women cannot endure life at a completely different cultural level, either physically or mentally. Thus, everywhere at the edge of the primeval forest and in the vicinity of the Pygmies, a slight “bambutization” of Negroid peoples in both the East and West can be observed and easily documented (Gusinde).

Nowhere, however, are human movements as difficult to untangle as in the interior of *the jungle*, where every obstacle means a barrier and nothing is a path! And yet the jungle was attacked, broken up, and penetrated from all sides and by all manner of peoples, so that von Eickstedt aptly spoke of a “concentric encirclement” against the Pygmies

. Thus, albeit under entirely different conditions, the mixing and intermingling of the peripheral regions found their continuation here. Often enough, even into more recent times, the jungle served as the last refuge for the displaced and defeated tribes. Particularly in the southern Congo region, which was more easily accessible due to rivers, such groups were able to move about freely. The migration took place in small groups, which were left to fend for themselves in the face of all difficulties and were subject to rigorous natural selection.

The Negrids living near or within the primeval forest are known to belong to a particularly coarse, short-headed, and stocky type, the *Palänegrid variety [cf. H. Baumann, p. 170]*. However, it cannot yet be determined whether these Palänegrids truly represent an ancient race. Montandon and von Eickstedt themselves prudently refrain from taking a position, while others (Hooton, Vallois, Trezenem, Gusinde) oppose the interpretation that they constitute a distinct or archaic form. The fragmentation and emergence of local forms complicate our understanding, and the picture still appears quite complex today. If we take the hinterland of the Guinean coast as an example, three successive waves from the Sudan can be clearly identified there: the Duala, the Maka, and the Fang (Chombart). Some of these groups have recently been studied anthropologically (Alcobé, Fernandez Cabeza, Olivier, Vallois), revealing tribal affinities that do not typologically align unambiguously with either the Palenegrids or the Sudanoids. Conversely, within the morphological series, there are also forms that clearly belong to one variety or the other, or that still clearly reveal the integrating racial elements, such as the Pangwe in Spanish Guinea.

With this, we conclude. Two main factors in the biodynamics of Africans have been identified: the east-to-west anthropodynamic flow of the Southern Mediterranean peoples and, even more importantly, the effect of the climatic dynamics of the drying Sahara, which first influenced the northern edge of the continent, then, to an ever-greater extent, the broad front of the Sudan, and finally the East African High Road as well. Here, Saharan and East-Ethiopian pressures converged and were inevitably channeled toward the south of the continent. There, long before the counterattack by the Europids from all sides, the penetration of the primeval forest had already begun. The Khoisanids of the Kalahari periphery and the Pygmy Bambutids of the central primeval forests are thus forms of adaptation; they reflect and preserve ancient specializations, just like the flora and fauna that surround them.

RACIAL TYPES AND BIODYNAMICS OF AMERICA

BY J. IMBELLONI

AMERICA has long**been** one of the most challenging continents for anthropologists. Even today, definitive solutions to all contentious issues are by no means in sight. In this endeavor, a group of European authors distinguishes itself from those in North America, including Mexico, while the stance of South Americans lies more or less between these two poles. Among the latter, however, a distinct school has long existed in Argentina which—although independent in its approach and formulation—has essentially developed in parallel with anthropological trends in Europe.

By now, most of yesterday's once-firm convictions have been proven untenable and discarded. Thus, the theory of the Tertiary American man—who was supposed to be the product of a distinct tribe of the southern steppes, as F. Ameghino (Buenos Aires, 1880–1884) claimed—has been discredited. Likewise, S. Morton's (Philadelphia, 1839–1842) assertion that the American human constituted a single variety stretching from Alaska to Cape Horn—uniform not only in terms of skull and morphology but also in terms of intellectual capacity—has been discredited. This assumption, which had already been effectively refuted in Canada by D. Wilson (Toronto 1856–1862) and in the United States by G. Aitken Meigs (Philadelphia 1856–1865) in the United States, was, however, revived in the first half of the 20th century by A. Hrdlička (Washington 1917–1925) and proclaimed from the lectern over the next 30 years as the final word in American anthropology. His theory was based on the following premises: 1. there is only a single American type, both morphologically and culturally (American homotype); 2. all variations occurring in America are exclusively variants of this type, produced by the influence of different geographical environments (Environmentalist School); and 3. all American peoples are descended from Northeast Asian peoples who migrated across the Bering Strait. A fourth thesis, which joined the aforementioned ones as a sort of cultural supplement, asserted that all the forms of civilization on American soil—including the most highly developed ones in Yucatán and Peru—had arisen in situ through the development of local seeds. In Europe, incidentally, these ideas were also advocated by J. Kollmann (Basel) in the last quarter of the 19th century, though they failed to gain traction there.

In Argentina, where Ameghino had already emphatically rejected the notion of a unified group of American varieties, his contemporaries—such as F. P. Moreno and, later, H. ten Kate, R. Lehmann-Nitsche, and their successors—consistently emphasized the diversity of the American hominid varieties. Finally, a countertrend has also emerged in the United States in recent decades, as seen in the work of R. B. Dixon (New York, 1923) and E. A. Hooton, and in Mexico by J. Comas, J. Vivó, and Johanna Faulhaber—not to mention Europe.

The new material compiled in the Americas reveals that the views on primordial origin and unity of form, once advocated with such zeal, stemmed largely from emotional impulses. Hooton expressed this clearly by courageously opposing the beliefs that had already become dogmatic in America: "We have constructed a kind of Monroe Doctrine for the indigenous peoples and are inclined to view references to foreign influences as acts of aggression. There may be a defensible basis for this, but I believe that this attitude rests on emotional grounds. From this dogma of uniformity emerged the principle of racial unity, which was passionately advocated by scholars in North America as well as by foreigners naturalized there" (Hooton, Toronto 1933). The last sentence alludes to A. Hrdlička and F. Boas, who were immigrants from Bohemia and Germany, respectively, and who cloaked in scientific garb the folk beliefs that prevailed in the countries where they worked for many years.

To be impartial, however, one must admit that similar affective and emotional influences—albeit in the opposite sense—sometimes come into play in the judgments of Europeans. As director of a museum of American antiquities and ethnographic artifacts, I have seen hundreds of educated—though not necessarily specifically trained in anthropology—travelers from Europe whose first reaction was to ask about and search for Egyptian, Chinese, or Norman remains in America. This tendency manifests itself spontaneously and irresistibly and leaves us with the impression of a disheartening monotony.

As we now proceed to outline in brief the successive strata of the American population, we would first like to offer a summary of the most important findings by way of introduction. In doing so, we rely particularly on the direct interpretation of the numerous concrete observations that are available. The American population is usually classified into three groups—Northern, Central, and South American—and this classification is applied equally to race, culture, and language. Historians and archaeologists have recently coined the term "Mesoamerica," which is also useful for anthropologists, since it includes Mexico and the ancient Mexican states, which form a distinct entity with unique characteristics as opposed to the North American world proper. Other classificatory criteria are, of course, those of anthropology, ethnology, and linguistics. Each of these disciplines—as we shall see—has its own sphere of expertise and contributes in its own way to clarifying the issues surrounding the American people.

1. THE LINGUISTIC CRITERION

The study of languages in the Americas has had—and continues to have—greater significance than in other countries, for as early as the beginning of the 18th century, when anthropological and ethnographic research was still in its infancy, this was the only means of approaching the American enigma.

Comparative linguistics has been able to identify only very few linguistic affinities with the peoples of the Old World. These pertain to the relationships between the Hoka group of California and the Malayo-Polynesians (according to P. Rivet, Paris 1926) and between the Patagonian and Australian languages (according to the same scholar, the latter being seriously contested by critics), as well as the isoglossematic framework of the Toki nomenclature, which links the Pacific Islands with the Pacific coast of South America and which I identified (Vienna 1930). Spatial linguistics has rendered great service. It has enabled me to report highly fruitful observations, which will be discussed below.

To begin with North America, the difference between the regions bordering the Pacific Ocean and those bordering the Atlantic Ocean is remarkable. In the former region, human groups—insofar as they are distinguished by their languages—are concentrated in large numbers within a small area, whereas east of the Rocky Mountains, only a very few languages are spread across extraordinary expanses. In Oregon alone, H. Hale (Philadelphia 1864) found at least 30 irreducible linguistic units, and Major Powell (Washington 1891) identified at least 40 of the 59 “stocks” that he was able to identify in North America. In Central America, W. Lehmann (Berlin 1920) observed the same phenomenon, namely a dense concentration of languages along the Pacific coast in contrast to the wide distribution of Maya and Miskito along the Atlantic Ocean. In South America, the eastern coast, from north to south, is home to the language families of the Chibcha, Yunga, Quechua-Aymara, Kunza, Mapuche, and Chon (along with several unclassified languages), and along the eastern Cordillera, one observes a strip of unclassified languages that are exceptionally numerous in the Rio Negro–Andes–Madeira triangle and in the headwaters of the right-bank tributaries of the Amazon, while the vast remaining plains serve only as the setting for the spread of a few languages. The cartographic representation of these spatial-linguistic facts allowed me to conclude as early as 1926 that “the Pacific coasts, in both the north and the south, constituted areas of attraction for migrations, while the Atlantic coasts represent the periphery of expansion.”

As for the extraordinary number of American languages and their fragmentation into local and tribal dialects, F. Müller had already concluded that this points to a lack of centralization and social and political cohesion. While we may concede that this line of reasoning explains the general linguistic phenomenon in the Americas, its scope must nevertheless be limited where languages have attained greater stability and thus also demonstrate the effects of their expansive power. This, however, usually occurs in connection with the development of significant religious, political, and economic phenomena that extend beyond their place of origin. These are the “cultural languages,” whose influence often extended far beyond the borders of their native peoples. This gave rise to the languages that were called linguae gerae in the Americas. These include, above all, Maya-K’iche’, Nahuatl, Chibcha, Quechua, Guarani, and others.

2. THE ETHNOLOGICAL CLASSIFICATION

In terms of their cultural heritage, the peoples of the Americas can be divided into the following categories, arranged in descending order: 1. Peoples with intense-

intensive agriculture (irrigation, fertilization, terrace cultivation); 2. low-level agriculture (sowing in naturally moist soils, simple horticultural techniques); 3. hunters; 4. gatherers who engage to some extent in hunting and, in particular, fishing; and 5. subsistence gatherers of roots, grasses, and berries who also consume mollusks. In Cl. Wissler's map of dietary patterns (New York 1922), two regions associated with maize correspond to No. 1 in the above series; one region associated with cassava (Manihot utilisima) corresponds to No. 2 above; then the three regions associated with reindeer, bison, and guanaco, which correspond to No. 3; two regions, namely those of salmon and the mussel (Mytilus), characteristic of No. 4; and finally, various smaller regions corresponding to the primitive and parasitic economy of No. 5.

As for clothing, the more advanced farmers cover their bodies with proper garments: tunics made of sheep's wool or cotton, woven on a loom but without a cut or belt. Reindeer hunters *[ice-hunting and snowshoe culture; see K. J. Narr, p. 507]* — following the example of the Eskimos—wear fur garments that are cut and sewn similarly to ours. Among hunters and gatherers, the simple fur cloak—which is often barely sufficient to cover the body—appears, much like that of the Australians. Today, however, cultural assimilation has given rise to many intermediate or mixed traditional costumes. One need only observe the spread of the Andean poncho, the transformation of the old cloak into the tipoy, etc.

With regard to footwear, a distinction must be made between the "Arctic boot" *[of the ice-hunting culture]*, characteristic of the Eskimos, the moccasin *[of the snowshoe culture; cf. K. J. Narr, p. 514]* in both major hunting regions (North and South America) and as far as the Mississippi Basin, and the sandals found throughout the entire range of the advanced farmers. The lower-level farmers and gatherers, however, go barefoot, with a few exceptions in the Chaco. In Patagonia, since the introduction of the horse, the moccasin has been replaced by a high boot made of horsehide (bota de potro).

The art of metallurgy (gold and copper) originated (according to P. Rivet, Paris 1919–1924) in Guayana and spread from there to Colombia, where the Chibcha people perfected it. Another center of development emerged on the Peruvian highlands, where bronze was later discovered, and from Peru it spread northward to Mexico and southward to northwestern Argentina.

Pottery underwent extensive development and spread throughout the Americas and is absent only in the territories of the hunters in the subarctic and in the far south, as well as among the indigenous peoples of the American Northwest and in the Brazilian rainforest.

Of the utmost importance are the development and influence of ecological and social units. With regard to housing—and if we theoretically group together huts made of leaves and twigs, as well as those simple shelters and windbreaks (i.e., all dwellings built of perishable materials and usable only for a short time)—there is a clear tendency for them to coincide with the hunter-gatherer tribes *[of the primitive or basic cultures; see W. Schmidt, p. 430]*. Their social structure does not extend beyond the union of two or three families in a horde. Another type of dwelling, the tent made of animal hides *[originating from the snowshoe culture] [see K. J. Narr, p. 512]*, characterizes the culture of the advanced hunters, not only in the forests and prairies of North America but also in the plains and steppes of Argentina (the regions of the ren and bison, or the guanaco). These are tents that can be easily dismantled and transported from place to place. Their original shape is conical. They are made from sewn-together hides, which are decorated on the inside with colorful paintings. Outside these regions, there are forms of acculturation, such as similarly conical huts made of rushes and grasses, and, along the waterways of the Tierra del Fuego forest regions, huts made of tree trunks. Among hunters, communal living has taken on the classic form of the camp (campamento), which is known in the south as a "tolderia." Dabci

It is interesting to note that the northern prairies and the southern Patagonian Pampas constitute two major core regions of hunter-gatherers that correspond in terms of latitude but also share the same nomadic way of life as well as significant cultural and physical similarities. The ecological unity of the hamlet is characteristic of both the corn farmers in the southeastern United States and the cassava-growing region in the vast Amazon Basin. Social organization here takes the form of tribal associations, characterized by matrilineal traits within the family —which entail matrilineal legal customs—as well as distinctive religious and ceremonial practices, including ritual cannibalism. On the eastern Caribbean coast, large communal houses can be observed that are intended for the cohabitation of the extended family and are likewise found among some Amazonian groups, although these large structures in Maracaibo rest on stilts. We find stone-built cities among the Pueblos of the ancient Mexican provinces and in northwestern Argentina, the Diaguita region. Fortified enclosures are also found there, intended to defend fleeing farmers in a valley. Such valley communities represent the highest level of state formation achieved in this region.

Undoubtedly superior are the organizational structures achieved by the Maya and Aztec peoples in Central America and by the Chibcha and Quechua in the Andean region of South America. These are already centralized state entities built upon administrative and military foundations of considerable strength, exhibiting a complex interplay of historical overlays or the predominance of certain religious, ceremonial, and legal institutions, which are themselves typically structured within an absolute and theocratic monarchy. The Maya state had already disappeared by the time of the Spanish conquistadors, and the states in the Peruvian highlands were found in a process of transformation and disintegration that—in contrast to those on the Bogotá Plateau—exhibited severe signs of crisis.

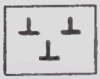
As far as arts and crafts are concerned, the American peoples have reached their highest level of achievement in three areas: finely decorated or modeled pottery, hemmed or tapestry-like woven hangings, and the art of multicolored leather jewelry. The latter constitutes a distinctive American feature that, with the exception of Polynesia, is not found among any peoples of other continents, while in the first two areas the Americans achieved a level of perfection that rivals or even slightly surpasses the creations of Eurasia. Monumental architecture reached an equally high level of development, both in Central America and in the Andean region. The stone ruins in Mexico, Yucatán, Guatemala, Honduras, Peru, and Bolivia inspire admiration for both their craftsmanship and the grandeur of the structures. All these advanced activities are, of course, limited to those peoples whom we have already highlighted for their advanced economic systems and well-established state structures. It is undoubtedly remarkable that none of them developed animal-drawn transport for truly heavy loads (the llama carries no more than 35 kilograms), nor did they know the wheel or the cart, nor the potter's wheel, nor, finally, an alphabetic script or even a purely phonetic script in the true sense.

3. MORPHOLOGICAL AND PHYLOGENETIC CLASSIFICATION

The time-honored and wise methodological recommendation—never, under any circumstances, to confuse linguistic phenomena with ethnographic or anthropological ones when classifying populations—has proven indispensable on all other continents. After all, in

PREDOMINANT HUMAN RACIAL TYPES IN NORTH AMERICA BEFORE THE SPREAD OF THE EUROPIDS

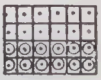
Eskimoid



Margide

Pacific

Western Planid and Eastern Appalachian Silvid



Northern Pueblid and Southern Istmid Centralid

There are both broad overlaps and wide divergences between one group and another. The American continent, however, occupies a highly distinctive position. Here, the boundaries of languages, cultures, and racial groups coincide in numerous ways. Thus, they support one another when it comes to understanding the major problems of this dual continent. Of course, there are also zones and lines of mixing, cultural assimilation, and linguistic foreign influence on American soil; yet these phenomena, on the one hand, do not tend to break out of the respective racial frameworks, and on the other hand, they highlight the zones of racial transformation all the more clearly—thus, in both cases, they do not disrupt the general framework of the original distribution.

Leaving aside the 19th-century classifiers, it is worth noting that as early as the first quarter of the 20th century, G. Sergi (Rome, 1911) and R. Biasutti (Florence, 1912) compiled their own taxonomic tables (with brief descriptions). The former distinguishes eight varieties primarily from a phylogenetic perspective, while the latter distinguishes nine formations primarily from a morphological perspective. Both demonstrate general agreement as well as a high degree of classificatory maturity, which is why we will take them into account in our list of synonyms. Some time ago, v. Eickstedt (1934) presented another classification in his major work on the racial history of humanity, in which the Americas are divided into nine racial groups. These are not merely empty labels but have been meticulously analyzed and characterized using morphological and cultural criteria and can be regarded as exemplary. Their designations were chosen based on the oldest available names, particularly those of d'Orbigny (1839). We will therefore include them as well in the subsequent list of synonyms.

Our own nomenclature is nothing more than a synthesis of the classifications by Deniker, Sergi, Boas, Biasutti, Pittard, and, above all, von Eickstedt, but adapted to a terminology that better corresponds to our South American customs and traditions, including some changes made by the author regarding the classification of the Andids, Istmids, Apalacids, and the dual designation "Lago-Fuegids," which required a clear distinction.

O. *Subarctic*. – Correspond to von Eickstedt's Eskimoids.

Hesperanthropus Columbi esquimensis Sergi; Biasutti's Neo-Arctic Formation.

Form groups in North America:

1. *Columbide*. – These include the Pacific race of von Eickstedt; Deniker's Pacific subrace; Biasutti's Subarctic Formation.
2. *Planids*. – The Silvids of Eickstedt; Hesp. Columbi Planitiae Sergi; Biasutti's North Atlantic Formation.

PREDOMINANT HUMAN RACE TYPES IN SOUTH AMERICA
BEFORE THE SPREAD OF THE EUROPIDS

south (on the isthmus) Centralide
Andide
Patagonide
Brasilide
Lagide
Huarpide Inland and Southern Coastal Fuegide

3. *Apalacide.*—Distinct *from*the preceding group; Apalache skulls (Zeune).
4. *Sonorids.* – The Sonoran type by F. Boas; Hesp. Columbi Sonorae by Sergi; Margids by R. von Eickstedt; part of the Formazione Sonoriana by Biasutti.

Form groups in "Mesoamerica":

5a. *Pueblo-Andide.* – The northern wing of this group is located in **Central America.**
6. *Isthmide.—Includes*, as a broader form, the Centralids of von Eickstedt, the Formazione centroamericana of Biasutti; Centroaméricaine (Isthmiens) of Deniker; and the Type Centroamericain of Pittard.

Groups of forms in South America:

5b. *Pueblo-Andide.* – The southern wing of this group is located in South America and corresponds to the Andids of Eickstedt; Hesp. Col. Andinus Sergi; Race ando-péruvienne d'Orbigny, excluding this author's Antisiana variant; Provincia Andina Biasutti (in part).
7. *Amazonide.* – Corresponds to the Brasilids of von Eickstedt; Race Brasilo-Guarani d'Orbigny; Hesp. Col. Amazonicus Sergi; Form. amazzoniana Biasutti.
8. *Pampide.* – Pampide by Eickstedt; Hesp. patagonicus Sergi; Form. patagonico–Pampeana Biasutti; Pampéens Deniker.
9. *Lagids.* – They constitute a part of von Eickstedt's Lagids, namely his mountain cave type; as such, they represent only a part of Deniker's well-known "Race Paléoamericaine," which corresponds to Sören Hansen's Lagoa-Santa race and de Quatrefages' "Race de Lagoa-Santa." Biasutti designates them as Form. Brasilo-orientale.
10. *Fuegide.* – They constitute a part of the aforementioned race according to Deniker, Sören Hansen, and others, and correspond to von Eickstedt's original coastal type.

This simple list of the terms we use and their synonyms is supplemented by a synoptic table of morphological characteristics, which A. Dembo (Buenos Aires 1947) compiled in the form of a summary of my diagnosis for each group.

4. SETTLEMENT, MIGRATIONS, AND CULTURAL HERITAGE

With due brevity, we now intend to present the conclusions that have been reached regarding the problem of the settlement of the Americas, while highlighting key data on the material, social, and intellectual life

of its peoples. Regarding the migrations of these peoples, one can only say that they demonstrate, to the greatest possible extent, a convergence of morphological, cultural, and dynamic data.

The first major methodological caveat for anyone wishing to investigate which peoples settled the American double continent through their migrations is that one must never refer to Australians, Malays, etc., as they appear on our modern maps. For it is necessary to refer to the ethnic panorama that was characteristic of the Old World in past epochs. This applies particularly to the eastern edge of that metamorphic region which, in Eurasia and Insulinda, separated the belt of the primary northern races from the belt of the southern sub-equatorial races. Virtually all of the world's secondary human groups originated from this region—namely, the metamorphic races [cf. R. Biasutti, p. 212]. This region falls within the sphere of the Mongoloid branch of humanity—in earlier times, of a pre-Mongoloid type, and later of the Mongoloids proper. The biological intermingling of this northern group with the sub-equatorial Australoid or Australiform branch gave rise to hybrid groups of various kinds, which succeeded one another over time as one or the other source came to predominate. American ethnogenesis, in its various phases, thus represents a process that runs parallel to the succession of human racial groups that successively predominated along the eastern edge of continental and insular Asia and the Pacific island chains. This process extended from the initial predominance of the Australoid group up to the widespread expansion of the Mongoloids.

However, these research findings must be supplemented by geographical analysis, as it provides a direct picture of ethnic dynamics. It goes without saying that one will first seek out the oldest strata and the areas furthest from the center of origin—namely, the most remote tips of the continents or the innermost refuge areas (retreat horste). Then, the entirety of human morphological groups that originated from the eastern tip of the Old World's metamorphic belt could be compared to a typical sedimentary stratification, in which the oldest layers would most closely resemble the archetype of the sub-equatorial races (longisomatic and dolichocephalic Australoids), while the more recent layers would increasingly resemble the northern model (brevisomatic and brachycephalic Mongoloids). It is precisely these soma-

However, a distinct sequence of types does indeed emerge in the New World. Here we present the sequence of population groups, beginning with the most remote and therefore oldest:

I. A stratum of dolichocephalic people of small but not stocky stature and with a very primitive cultural heritage, who in many cultural elements resemble the extinct Tasmanians (rudimentary knowledge of stone toolmaking, bark boats made of three different parts, etc.) *[southern proto-culture of America according to W. Schmidt, cf. p. 388]*. At the time when this somatic and cultural type still predominated in the eastern part of the Old World, it spread via established routes (Bering Strait) as far as America. Today, its remaining pockets inhabit the most remote and distant coasts (the southern tip of the southern continent, the tips of peninsulas, islands, jungle nooks, etc.), because it was increasingly displaced by subsequent human populations. It constitutes the race that we designated as "Fuegide" in the aforementioned list and refers to surviving tribes as well as to much more numerous ones that have already become extinct.

Among the former, mention should be made of the Yamana and Alakaluf of the Tierra del Fuego straits, then the Tschonos of the southern Chilean coast, the Tschangos of Peru, and the Uru of Bolivia, as well as several groups in Venezuela and, in Brazil, the Aymoré (Botokuden); and among the latter, the extinct tribes that left their remains in the sambaquis (shell mounds) of Brazil, the conchales (shell mounds) of Valdivia, Coronel, Coquimbo, etc., in Chile, and at Humboldt Bay in Northern California, and finally in some surviving tribes north of San Francisco.

II. A group with a physical build related to that of the Melanesians, of shorter stature and with a very tall and long skull that is extremely narrow in the temporal region, and which exhibits a predominantly parasitic culture (gatherers). Its largest surviving population occupies the Brazilian Plateau (the Planalto), but has left remnants scattered throughout the Brazilian rainforest in isolated groups and hordes, which both white and indigenous farmers know how to distinguish with infallible instinct. For the latter, they are the object of relentless persecution; for the former, they are the object of the most severe subjugation.

These are the Indians of the Matto: Macu, Mura, Sciriana, Trumai, Siriono, Qurungua, Guayaqui, etc. Osteological remains of them have been found in the Northern Andes (Punin), in Mexico (Coahuila), and in the southern part of the California Peninsula (the extinct Pericu)—that racial group we mentioned above under the name *Lagide*. Their main area of refuge was the eastern Brazilian plateau, the Macizo. This was true, so to speak, until yesterday, for today their typical way of life—gathering—has been transformed in every nook and cranny through acculturation with the lower agricultural tribes, which surround them on all sides and whose physical type is that of the Amazonids. The infiltration of this group into the American continent occurred

somehow by land, specifically during the period when the Melanesian type predominated on the eastern edge of Eurasia (including Indonesia and Melanesia). In any case, the emigration took place before the development of seafaring, which would later reach remarkable heights throughout Melanesia.

III. The third stratum of the population also included dolychocephalic individuals, though more moderate in type (dolychoid) than those mentioned above, of tall and very tall stature, whose physical appearance partly resembles that of Australians. They gradually abandoned small-game hunting to turn to big-game hunting, which resulted in a pronounced nomadic lifestyle. In recent centuries, following the adoption of the horse introduced by Europeans, this led to very characteristic forms and the emergence of the so-called "horse-complex" in the prairies of the north as well as in the Pampas and on the Mesetas of the south. In the genetic composition of this group, the first clear traces—though by no means strong—of Mongoloid influence appear, which are moreover initially limited to the earliest phase of this branch (pre-Mongoloids). This human group also migrated overland. It populated the open spaces of the northern continent, particularly east of the Rocky Mountains. The hunters of North America exhibit certain physical differences that led us to classify them into at least two groups: the Planids and the Apalacids.

The features of the Planids are generally attractive, and their facial expressions are powerful. Their popular designation as "Redskins" stems from their red war paint [cf. K. J. Narr, p. 513]. The Planids have preserved to the highest degree the characteristics of a ceaseless, dynamic nomadic lifestyle, which enabled them to occupy almost the entire low-lying region comprising the subarctic forests, the central prairies, and the valleys of the great rivers of the South. These vigorous movements continued throughout the entire colonial era and did not come to an end until the 19th century with the final migrations.

The Apalacids occupied the eastern part of the continent from Labrador to the Mississippi Basin (which had been completely deforested over the past centuries). They advanced from north to south in two directions: first along the St. Lawrence River to Lake Erie, and second along the Appalachian Mountains. Their cranial type was distinctly dolychomorphic, but became dolychoid through intermixing. Other characteristics include a high facial profile without prominent zygomatic bones and a tall stature. Mentally, they displayed a high degree of organizational ability, which, combined with their warlike tendencies, led to the formation of powerful confederations such as that of the Iroquois, which the British invasion utilized to consolidate their conquests. They were partially familiar with crop farming and, in war, employed fortifications and village strongholds surrounded by palisades. The Confederacy of the five (later six) Iroquois nations (the Huron, Wyandot, Lenape or Delaware, Iroquois or Minge, and their allied tribes) also shared a common language, including among the subjugated tribes.

Two other racial groups also share these characteristics of a longilinear physique, a hunter-gatherer lifestyle, an incomplete and primitive patrilineal system, and great mobility. One is found in the southeastern part of the North American continent: the Sonorids; the other in the far south of the South American continent: the Pampids.

The Sonorids exhibit a moderately dolychoid skull with a narrow forehead and a narrow jaw angle relative to the width of the zygomatic bones, a longilinear physique, and long limbs in comparison to the torso. Their overall physique appears light and graceful and bears traces of infantile features. This is evidently a physiologically frail race. Their range extends from Oregon and California, then further south to the areas adjoining the eastern Sierra Madre, including, of course, the Mexican state of Sonora, from which they derive their name.

The Pampid people are characterized by their tall or very tall stature and inhabit the savannas and forests of the Chaco, the central Pampas plains—including their eastern strip (Uruguay)—and the steppes and mesetas in the south down to the southern tip, that is, to the northern edge of Tierra del Fuego (north of the axis from Lago Fagnano to Seno del Almirantazgo). As this group expanded southward, it left a trace in the Brazilian Bororo tribe of the Mato Grosso. Furthermore, their influence becomes increasingly evident the farther one moves from the Amazon region toward the Chaco, particularly with regard to increasing height, as we shall see in the discussion of the Amazonids. The Pampids most frequently mentioned in historical literature are the Patagonians (Tehuelche), of whom Pigafetta provided a detailed description as early as 1520, and who astonished readers of travel accounts with the reputation that they were giants. I visited their last few scattered remnants in 1949 and believe that, in the 18th century, the Patagonians could typically be as tall as two meters. Their athletic build and the even distribution of their musculature make them—and the Pampids in general—one of the most magnificent examples of the human body.

IV. The fourth group has its origins in a later phase of the same process, during which a metamorphic formation dominated the eastern edge of the Old World. Its most striking feature is a noticeable proportion of the Mongoloid component, which, moreover, is no longer characterized by the ancient pre-Mongoloid branch but by the subsequent Mongoloid one. The facial features of the people in this region resemble those of the proto-Indonesian populations, who are moderately dolychoid and of medium stature. Their cultural practices range from the headhunting traditions of Borneo—with blowguns, curare-poisoned arrows, and fiber armor—to the agricultural traditions of Melanesia, featuring weaving and fabric dyeing using the knotting method (ikat). They are highly skilled in modeling fired clay and are masters of woodcarving and decoration. The American stratum, formed by the components of this group, does not appear as a completely compact and uniform block, and

we must not conceive of it as a single stream, but rather as the result of a whole series of smaller streams that succeeded one another and vied with one another for space. Their internal differentiation is undoubtedly of only minor significance in terms of morphological characteristics, but it is evident in the differences in material culture.

The group we are describing here encompasses, from a racial perspective, the Amazonids shown on our map, and from a linguistic perspective, the three major families of the Tupi, Aruak, and Carib, as well as the Tucano and Pano and a large number of unclassified languages, which, as already mentioned, are most densely concentrated in the Rio Negro–Andes–Madeira triangle. All are subsistence farmers who abandon their cultivated areas in cycles of three to four years. The mobility of some groups is extraordinary, as shown by the map of the distribution of the Tupi and Aruak tribes, which are found throughout the Amazon region. But if we take the Aruak, for example, we see that they measure 155 cm in Guayana, 159 cm in the Middle Amazon region, and 164 cm in the Southern Amazon, and the head length-to-width ratio decreases accordingly from 82.6 to 80 and 77, respectively. This shows us, on the one hand, that the number of Aruak-influenced tribes is considerable and, on the other hand, that the farther south we go, the more frequently we find remnants of the Pampid layer. Of great anthropogeographic interest—and something most Americanists fail to realize—is that the Amazonids' habitat is exclusively South American.

From this point in the process of population formation onward, the **progressive** predominance of Mongoloids over the equatorial component plays an increasingly significant role—not only among the morphological groups spreading toward the Pacific Ocean but also among those reaching the Americas. On the other hand, the parallelism between the two morphological series is revealed with complete clarity in the sequence of increasing short stature (pyknicity) accompanied by a progressive reduction in the length of the lower limbs (brachyskelia) and head length (brachycephaly). The stratum of the new style is represented by the following group.

V. The human stratum characterized by a short and stocky build, a short head, a short face, and broad cheekbones—with a nose that is protruding yet equally broad—along with the widespread practice of artificial skull deformation, which is evident in the Mexican region and throughout the Andean corridor, compels us to advocate for the fundamental unity of the Pueblo-Andean peoples. This holds true even though their current range is divided, namely due to the incursion of the Isthmids, who arrived later.

The Central American section, that of the Pueblos, encompasses the valleys of the Rio Grande del Norte, the Colorado River, and parts of the Rio Gila and Salado, where skeletal remains of the inhabitants of stone houses, mesas, and barrancos (Pueblos and Cliff-Dwellers) have been excavated. Their cultural inventory differs in its richness from that of the less civilized tribes (Apache and Navajo), who later arrived from what is strictly speaking North American territory. The South American section encompasses parts of Colombia, all of Ecuador, Peru, Bolivia, northern and central Chile, the Andean regions of Argentina, and the Chaco of Santiago del Estero. These are

tribes with advanced agriculture and a maize-based economy. They have achieved higher social forms and built stone cities; they are skilled weavers and excellent potters with a highly developed artistic sensibility. Their head deformation favored the flat, tabular shape (exclusively among the Pueblos and predominantly in the Calchaqui Valleys and the Chaco of Santiago).

VI. While the unity inherited from their ancestors flourished from the Rio Gila to the Bio-Bio, a new layer superimposed itself in the central section, affecting the isthmic region. These Isthmids possess characteristics similar to those of the Pueblo-Andids, but to a greater degree: even shorter stature, even more pronounced brachyskelia, and even more severe brachycephaly, extending to a truly spherical shape (indices around 100). In the Old World, the Isthmids can be regarded as "Homoiomorphs" and, at the same time, as "Homoioethics" in relation to the more civilized peoples of Indonesia.

In the Americas, their advanced artistic culture is attested by the Mesoamerican civilizations, whose example later influenced the Mexican region and a large part of South America, to which they sent at least two waves of cultural influence at the dawn of early American history (that is, during the European Middle Ages). Some of these connections took place overland, namely through the inter-Andean forests (primarily bringing stone sculpture and architecture), while **others** followed maritime routes along the Peruvian coast (and particularly brought about the high development of the ceramic arts). The decisive achievement of the Isthmids' cultural century, however, was their social organization, religion, and administration in the exemplary form that the Maya radiated throughout their surroundings.

The Columbids in the northwestern part of North America and the Eskimos *[W. Schmidt's Arctic-North American proto-culture, see p. 382]*, who form the subarctic belt, represent the most recent strata (VII and VIII). It has been claimed that both groups constituted a kind of original core of the entire American population, based on a wide variety of arguments, including morphological ones. But this contradicts all the facts of comparative morphology.

The Columbids occupied a vast area in the shape of an arc, with the chord lying along the Pacific Ocean and extending from Alaska to the Columbia River, and the interior of the arc reaching as far as the Mackenzie and Athabasca basins. From there, they have penetrated in some areas as far as Arizona, New Mexico, etc. It is understandable that their distinctly Asian (Mongoloid) features have seeped into the Canadian indigenous peoples in countless combinations (Hill Tout 1917). The relatively recent nature of this stratum, accompanied by its own distinct artistic production, is unmistakable. They are avid practitioners of cranial deformation, using either the board method or, more commonly, the circumferential band deformation characteristic of the Pacific Ocean region.

Those authors who, in exaggerating the resemblance between the Eskimos and the appearance of Canadian hunters, hold the view that the Eskimos represent the cradle of all dolichocranes in the Americas have been guided by a one-sided craniological perspective—and even this is incomplete. I have already shown elsewhere that the physical proportions of the Eskimos and Patagonians (particularly the radio-humeral and tibio-femoral indices) are incompatible with one another (Buenos Aires 1948).

As for the small groups that reached the American coast across the Pacific Ocean in historical times, when all other population groups had already established their permanent settlements, we must regard them as recent Polynesian influences, the impact of which was essentially cultural in nature.

Summary. If we summarize our discussions of the linguistic, tribal, and morphological relationships, as well as the population groups, they provide certainty that it is incompatible with the facts observed on the American double continent to regard the Indians as a single, cohesive unit that is uniform from Alaska to Cape Horn.

As for the statistical characteristics of the ancient population, one can only say: 1. it was extremely sparse compared to the vast expanse of the two continents; 2. there were extraordinary differences between areas of dense settlement and the rest of the territory; 3. the inhabitants of exceptionally vast regions preferred to settle along rivers or ocean coasts; 4. in areas with a settled economy, there were denser and more continuous settlement clusters. The maximum carrying capacity in the Americas corresponds to that of the Muequeta Plateau—present-day Bogotá—at 64 inhabitants per square kilometer. The calculations by Saper and Rivet indicate a population of 35 to 45 million at the end of the 15th century, of which approximately 15,500,000 remain today. This figure is partly attributable to the recent upturn observed in some regions, where people have demonstrated a greater ability to adapt to the modern way of life.

ETHNOLOGY AND ETHNIC HISTORY OF OCEANIA

BY RENATO BIASUTTI

The indigenous peoples of Oceania are, for the most part, among the peoples whom Europeans have only recently come to know. The first major reports did not appear until after James Cook's voyages. Drawing on older sources remains necessary even today for understanding the culture, language, and race of the indigenous peoples, especially when it comes to groups that have disappeared or have been significantly altered by colonial contact. One region, however, remained largely untouched by Europeans and the consequences of this encounter due to its vast expanse and its equatorial rainforest climate: New Guinea, the largest and most prosperous of these island regions. Its anthropological and ethnological exploration is still ongoing. The islands of Melanesia, which lie further east in large island arcs running parallel to the coast of Australia, are also quite extensive and covered by a dense mantle of tropical forests. Here, too, many tribes of the interior remained untouched by the influence of white settlers until recently. In contrast, Europeans, East Asians, and North Americans have been able to settle on most of the archipelagos scattered across the open ocean, since the predominantly volcanic nature of the soil and the genuinely maritime climate here created an environment more conducive to "whites" or "yellow people." The general lack of space had a particularly disastrous effect on the coexistence of the indigenous populations.

Consider that the two largest oceanic islands between the two tropics—Hawaii and Viti-Levu—are roughly the size of South Baden (10,000 square kilometers). The total land area of Micronesia and Polynesia does not reach that of Italy, and this area is fragmented into thousands of pieces—large, small, and tiny—spanning a latitude of 70° between the northernmost inhabited island in the Hawaiian archipelago and the southern boundary of the ancient indigenous settlement area in New Zealand, and a longitude of 115° between the Palau Islands and Easter Island (almost one-third of the Earth's circumference!). The volcanic or coral island groups, separated by vast distances, emerge like small, isolated oases in the immensity of the Great Ocean. The Hawaiian Islands are 3,300 km from the Marquesas Islands and 3,500 km from the Samoan Islands. Easter Island stands isolated, 2,400 km from the Mangareva Islands—the nearest inhabited areas—and 3,700 km from the coast of Chile. This widespread dispersion of the islands

cannot be better illustrated than by the experience of Magellan, whose ships, sailing from the shores of South America to the Mariana Islands—that is, near the Asian seas—sighted only the two islets (perhaps two of the Paumotu Islands) known as "the Unfortunates."

Outside the tropical zone, Oceania offered Europeans a new continent, named "Australia" in honor of a vast hypothetical southern land envisioned by geographers, as well as the large islands of Tasmania and New Zealand. Australia soon revealed itself to be an extremely peculiar world. It is the smallest, but also the most monotonous and, relative to its total area, the driest of the continents. Spanning 2,500 km from southwest to northeast across the Southern Tropic, it lacks a single permanently flowing watercourse.

Nine-tenths of the surface is covered by bush steppes and semi-deserts with tough grasses or prickly shrubs ("scrub"; "spinifex"); the forest along the eastern coastline, which receives more abundant rainfall, is generally also sparse, and the eucalyptus trees, which form its predominant component, have the peculiarity of orienting their leaves parallel to the sun's rays and therefore provide little shade. The Australian forest is bathed in light everywhere. Australia's fauna has almost no placental mammals that were not introduced by humans; instead, it features primitive types of mammals, represented by the monotremes and marsupials, which have developed a great diversity of forms here. Even the people here represent one of the most primitive forms of those currently living, based on their physical and cultural characteristics. O. Schütensack even hypothesized (though it was easy to refute this far-fetched hypothesis) that this vast, isolated, and arid land, with its wide, open horizons, devoid of impenetrable forests and dangerous animals, was the original homeland of the hominids.

In the southeastern corner of Australia, but even more so in Tasmania and on the two islands of New Zealand, the climate and vegetation take on the character of the southern temperate zone, which is cooler and more humid than the northern zone relative to its latitude. New Zealand is roughly the antipode of Spain, yet it has the climate of Great Britain. The fauna and flora preserve—and indeed emphasize—the characteristics of primitiveness and antiquity, with tree-like ferns and araucarias, primitive mammals and flightless birds, and amphibians and reptiles of the Mesozoic type. It is a world with the characteristic image of primeval life, protected by a long period of geographical isolation.

1. ETHNIC GROUPS AND LANGUAGES, THE INDIGENOUS POPULATION

Before the arrival of Europeans, the population of Oceania consisted of groups that differed greatly in appearance, language, and cultural development. These differences gave rise to a number of regional names that are still in use today. While

Tasmania, Australia, and New Zealand owe their names to the Age of Discovery, New Guinea was named after African Guinea because of its dark-skinned, curly-haired natives. In the first half of the 19th century, the geographers G. L. de Rienzi (1831) and Dumont d'Urville coined the rather unfortunate names Melanesia ("Islands of the Blacks"), Micronesia ("Small Islands"), and Polynesia ("Many Islands"), which were then also used to refer to the populations of the respective island regions.

The peoples of Oceania can be grouped in various ways based on race, language, or culture.

As far as *racial characteristics* are concerned, a distinction must first and foremost be made between the group of dark-skinned and light-skinned peoples. The dark-skinned peoples generally also exhibit fairly primitive facial features (e.g., platyrrhine or subplatyrrhine nasal indices). They include the extinct Tasmanians, the Australians, and the indigenous peoples of New Guinea (Papua) and Melanesia. The Australians are of fairly tall stature and have wavy or curly hair (kymotrich); the Tasmanians and the Papuan Melanesians have frizzy or crimped hair (helikotrich) and are of medium or small stature, and in some places even pygmoid in stature. However, the morphology and physiognomy of the face attest to the close kinship among all dark-skinned peoples of Oceania, with the exception of some Pygmy groups in New Guinea. The kinship between the Tasmanians, Australians, and some groups in Melanesia (in New Britain, New Caledonia) is evident in the striking coarseness of their bone structure, which lends them a particularly fierce facial expression—indeed, an almost animal-like appearance. An analysis of the basic components of these dark-skinned racial groups in Oceania has not yet been conducted, but it is certain that they are closely related forms, although they differ in hierarchical value. The debate over whether Australians or Melanesians are hybrids seems premature as long as the various components have not been clearly identified.

In contrast to the dark-skinned peoples are the Micronesians and Polynesians, who have light skin, tall stature, and a progressive physiognomic type. At the western edge of their settlement area, they have also encroached slightly upon the Melanesian racial zone, though they evidently advanced to various islands relatively late. Recently, these movements have also been in sharp decline. The original areas of distribution of the dark and light races are clearly demarcated from one another without a transition zone.

The distribution of *languages* presents a different picture. The Austronesian language groups have spread widely by sea and have also encompassed a significant portion of the Papuan-Melanesian racial area. The close connection with the languages of Indonesia, which belong to the same family, remains the most conclusive evidence to date of the South Asian origin of the Micronesians and Polynesians. In Oceania, however, three distinct language groups have emerged: the Melanesian and Micronesian languages—both ancient and closely related—and the Polynesian language.

The Melanesian language is spoken on almost all the islands to the east and southeast of New Guinea, extending as far as New Caledonia and the Viti Islands. It has also spread along the northern and southeastern coasts of New Guinea. These, then, are the areas inhabited by the Melanesians in both a linguistic and ethnic sense, while the peoples of New Guinea who have remained free from this influence bear the Malay name "Papua."

The Papuan languages, about which little is yet known in terms of their internal and external relationships, are also found outside of New Guinea on some islands of the Bismarck Archipelago and the Solomon Islands. Although there is a very clear linguistic distinction between the Melanesians and the Papuans in the strict sense, the ethnological literature frequently uses both terms interchangeably, especially when referring to the race inhabiting the region comprising the interior of New Guinea and Melanesia, which is often called the Papuan (Papuan, Papuanese) or Melanesian race.

The indigenous languages of Oceania are thus represented by the Tasmanian, Australian, and Papuan languages. P. W. Schmidt has reduced the languages of Australia to a few groups; some elements are common to all of them (A. L. Kroeber). Trombetti's more extensive comparisons, on the other hand, reveal remarkable ancient affinities among all these Oceanic languages and, in some cases, certain superficial affinities with the Dravidian languages and Andamanese. From a linguistic perspective, the indigenous peoples of South Asia and Oceania would thus constitute a single, very ancient group with many shared characteristics.

Incidentally, there is no shortage of evidence that these southern regions of the world were populated by humans very early on.

The existence of Homo sapiens in the Pleistocene is proven for Australia by the fossilized skull of a young man, which was discovered in 1884 in Talgai (Queensland) but was not described until 1914. It shows a very close relationship to the present-day Australoid race, even reflecting the tall, long, and narrow skull shape characteristic of Central and Northern Australians. This feature distinguishes it from the Tasmanian type. However, other characteristics give it a morphology that is more primitive than that of modern Tasmanians and Australians, particularly the striking prognathism of the face and enormous canines of an almost animal-like appearance. We can therefore refer to him as a *proto-Australid* form. His less modified descendants are perhaps the natives of New Caledonia, who, due to many features of the cranial vault (bone thickness, structure, supraorbital foramen, and occipital foramen) and due to the enormous development of the molars (hence also the very strong

prognathism, the position of the foramen occipitale, and the width of the nasal and palatal regions) have been described by Sarasin as the most primitive living race.

In the vicinity of the area where the Talgai skull was found, the remains of gigantic extinct marsupials have come to light, including the *Diprothodon*, which was the size of a small elephant. The Talgai man, too, must have been of very robust build, possessing physical strength superior to that of the present-day forms descended from him; and although, as mentioned above, some modern Pacific races give the impression of clumsiness and "animal-like" features, they appear remarkably refined in comparison to this fossil relative. The characteristics of the Talgai Man have also been identified in four subfossil skeletons discovered in Cohuna (Victoria) in 1925 and, more recently, in the find from Mount Gervois in Central Australia.

The fossil skull found in Keilor (near Melbourne) is claimed to be of Pleistocene age; Weidenreich considered it to be approximately identical to the fossil skull from Wadjak (Java). Now, Wadjak is generally regarded as proto-Australid (Dubois, Keith, Weinert) and would thus be evidence (from the last Ice Age?) of the first settlement of Australia. The similarity between the two finds is indeed very great, but it lies precisely in the characteristics that differ from the modern Australian type: the large cranial capacity, the absence of orbital ridges, and the broad and depressed nasal bones. Wunderley and Vallois place this fossil type in an intermediate position between Australians and Tasmanians. However, due to certain characteristics, it is—unlike Talgai—less primitive than the two extant forms.

Australia, Tasmania, and New Guinea rise from a single shallow sea floor, meaning they belong to the same continental plate. An elevation of just a few hundred meters would be enough to turn these three island nations into a single continent and connect it to parts of Eastern Insulind and Northern Melanesia. Primitive mammals are still widespread in this region today, whereas the Malay faunal region to the west is more richly developed, with its monkeys, pachyderms, and wildcats. The Oceanic faunal region to the east, by contrast, contains no terrestrial mammals dating from before the arrival of Europeans. It stands to reason that a land bridge connecting to Australia also existed during part of the Quaternary period. In any case, there is no doubt that the Tasmanians had to cross the nearby continent, where some traces of their passage have been left behind.

On the South Island, the Tasmanians bear clear signs of their "equatorial" origin in their curly hair, their dark skin, and their remarkably broad noses

. However, even regarding the passage of the Proto-Australids as far as New Caledonia and the advance of the Pygmoids as far as New Guinea and perhaps beyond, it is difficult to assume that a permanent land connection was absent. It probably existed for a period that was too short to allow the penetration of the Malayan fauna, but sufficient for the faster migrations of humans.

In the eastern part of the Australian region, humans spread exclusively by sea. The great antiquity of the populations of South Melanesia and Polynesia would therefore have to be gauged by the early maturity of an adequate development of nautical technology. However, our knowledge in this regard is still very uncertain. What can be said with some certainty is this: the period during which the maritime dispersal of the Melanesians and Polynesians must have taken place is already considered historical for the countries east of the Mediterranean. The Maori found a giant flightless bird (Dinornis) in New Zealand and contributed to its ultimate extinction. This, too, occurred in more recent times.

The black peoples of Oceania are not Negroes. The dark races of Oceania also form a single genetic group, although some have curly hair and others have wavy hair. Essentially, the latter are represented by the indigenous race of Australia, to which we, following E. v. Eickstedt, give the name *"Australide."* The curly-haired races are more numerous because they include the *Tasmanids* and the two main forms already mentioned for Papua and Melanesia, which we call *Papuasids and Melanesids*. The latter correspond to the distinction that von Eickstedt termed "Neo-Melanesides" and "Paleo-Melanesides." However, he also includes the extinct Tasmanian race among the latter. However, they are all forms of a distinct *southern* branch within the group of equatorial races. This group also includes the African Negroes, the Pygmies, etc. The claimed close kinship between the African forms and the Oceanic races with curly hair has been refuted by skeletal and physiognomic characteristics. We therefore believe that those scientists are mistaken who rely primarily on the structure of the hair system and group all helicotrichous races of the Southern Hemisphere into a single category, thereby separating the Australids from the Tasmanids and the Melanesids.

The Oceanic "Blacks" are therefore not "Negroes." Incidentally, the curly hair of some Asian and Oceanic groups exhibits distinctive characteristics. Sir W. Turner, who had studied this contentious issue with great care—specifically seeking to determine the anthropological status of the Tasmanians—found no Oceanic group with hair exhibiting the very short spiral characteristic of the African type. In some

places in New Guinea and among the Tasmanians, the hair is already longer, less fine, and less curly; the curl is less short, and the cross-section less flat. Among other groups in Melanesia, the hair is scarcely curly ("frisé") like that of the Ethiopians. In various districts of New Guinea, wavy hair predominates, and this appears to be the norm throughout Melanesia during the first years of life. The hair does not become curly until the age of three to five, whereas among Africans this occurs immediately after birth. Some areas with a particularly high concentration of wavy hair in New Guinea and some neighboring islands can be attributed to the influence of the *Weddid* race [*cf. E. v. Eickstedt, p. 132*], which is even represented in isolated cases with all its characteristics. However, the occurrence of wavy or curly hair in early childhood has also been observed in areas where traces of the Weddid people can be found: F. Sarasin was able to document this phenomenon in New Caledonia. He rightly concludes from this that the Melanesians, for the most part, are descended from ancestors who did not have frizzy hair. Further confirmation of this assumption is found in the fact that the first-generation mixed-race offspring of Melanesians and Europeans already have wavy hair and pale yellow rather than brown skin, whereas mixed-race offspring of Europeans and Africans represent an intermediate type, but predominantly with kinky hair.

On the other hand, the type of some Pygmy groups in New Zealand shows that a portion of the Pygmoids of the Oceanic equatorial forest can indeed be grouped with the Asian Pygmies. It would therefore be important to determine to what extent this element has penetrated Melanesia, since a maritime dispersal is difficult to assume. Other Pygmoids of New Guinea and the New Hebrides are likely the result of secondary and local modifications of the small-statured Papuans.

2. THE RACIAL CLASSIFICATION OF THE POLYNESIANS

Another major, still unresolved issue is the systematic classification of the Micronesians and Polynesians. The great difficulty lies in the diversity of opinions that have dominated—and continue to dominate—the field of racial studies. Numerous scholars have classified these peoples as *"Europids,"* including the authors of the two most recent and highly regarded works on the systematics of human races (v. Eickstedt and Montandon). Less widely supported, but including some no less distinguished names, is the group of scholars who have proposed classifying the Polynesians within the large group of *Mongoloid* races; and finally, there is a notable school of thought that leans toward a hybrid origin—mostly *Mongolo-European*, and in some cases *Mongolo-Melanesian*.

The cause of these persistent disagreements lies in the fact that certain characteristics of the Polynesians—such as their brownish-yellow skin, the occasional occurrence of the Mongoloid eye, and certain peculiarities of the facial skeleton, point to the characteristics of the "yellow races"; yet the impression of the living subject—especially in the central and southern groups—is that they represent a form oriented toward the Europoid types. The wavy hair and the proportions of the body reinforce this view, and the resemblance can be so strong

that, in isolated cases, it gives the appearance of being identical to Southern European forms (a type that Giuffrida-Ruggeri calls “pseudo-Mediterranean”).

Despite their predominantly European characteristics, the Polynesians cannot be classified as belonging to any European race, and the same difficulty arises when attempting to determine their relationship to Mongoloid groups. In anthropological taxonomy, they therefore occupy a category of their own, and the name *“Polyneside,”* proposed by von Eickstedt, is also appropriate for them. However, the origins of this form must undoubtedly be attributed to the convergence of several primary races. Above all, a *Mongoloid element* is evident, which, in terms of facial structure, is linked to the Palæomongoloid group; occasional slight traces of the Mongoloid eye, the pronounced width of the zygomatic bones, and the great height of the face—particularly in the lower part—are also present. Sera refers to a southern Polynesian group (the Morioris of the Chatham Islands as the purest representatives of the type), emphasizing their leptorhynia and dolichocephaly and the distinctive shape of the skull with a very receding forehead, such that the sagittal profile shows its greatest height set very far back: a form that has been mistakenly interpreted as the result of artificial disfigurement and occurs very frequently among Amerindians and is even found in some of the oldest prehistoric American skulls (Nococeca, Punin) [*cf. J. Imbelloni, p. 198*]. Sera believes that this human type constitutes the main component of the Polynesian race. We, however, believe that the present-day collective type was significantly shaped by a Europoid component. It should be noted immediately, however, that this Europoid element does not exhibit the characteristics of a highly refined form.

The average nasal index of Polynesians is generally quite high, and this seems to be attributable mainly to a second type, which also exhibits clear similarities in facial morphology with the “Indonesoid” and “Melanesoid” peoples. Sera has in fact defined this type as Melanesian. This precise designation, however, stands in contrast to the fact that no traces of melanodermic and curly-haired peoples have been found on any of the islands of Polynesia. Not even among the Māori, who are somewhat darker-skinned and sometimes have wavy hair, nor in peripheral areas such as Easter Island, which had preserved the most primitive and least developed forms of the Polynesian region. Volz claimed, precisely on the basis of these primitive characteristics, that Easter Island had received a Melanesian influx prior to the spread of the Polynesian type, a claim that Meyer and Jablonowski were able to easily refute through observations made of living subjects. In contrast, the effects of Papuan-Melanesian incursions are clearly visible today in Western Micronesia, in the Tonga Archipelago, and on several other islands where secondary contact between the two races has occurred.

Therefore, the Europid component of the Polynesians is more closely associated with the very ancient forms of Europids, with groups of *pre-Europids*, whereby contact with equatorial races is likely. The presence of this element is confirmed by the study of another population of Oceania, the Melanesians.

For in the range of the Melanesian people, alongside primitive and, in some cases, extremely primitive forms—which indicate a lower hierarchical position than that of the Papuan people—one encounters forms and progressive traits characterized by greater stature, a reduced nasal index, and facial features resembling those of Europeans. The same type or related forms occur along the coasts of New Guinea. It may be assumed that in these cases as well we are dealing with a Europid element possessing certain sub-equatorial characteristics, which constitutes the continuation of similar types found in India (Indo-Melanides) and the Indian Archipelago (the Europid component of the Indonesids). It is this element—and not the helicotrich Australian races—that undoubtedly disseminated the Austronesian languages throughout Melanesia and Micronesia.

From the fusion of these two racial elements—we do not know whether this occurred before the migrations to the Pacific island nations or during one of them—the great Oceanic race of the Polynesians emerged, which is therefore not to be classified among the primary races but, in the opinion of J. Imbelloni, among the derived or metamorphic races, similar to the indigenous peoples of the Americas *[cf. J. Imbelloni, p. 197]*. However, certain characteristics have become dominant here that give the race a greater resemblance to Europid forms.

The Polynesians, however, embody a type that has attained full stability, as evidenced by recent intermarriages with Melanesian (Nauru) populations, as well as with Northern European (Pitcairn), Southern European (Hawaii), and Chinese (Hawaii) elements. The characteristic of an independent race is further confirmed by the presence of distinctive features that do not originate from any of the related types. This applies above all to the Central Polynesian type with its tall stature, pronounced brachycephaly, athletic body structure, and the development of characteristic physiognomic features. This type is not found outside the Pacific Islands, and the geographical distribution of its most pronounced forms indicates that it is endemic to the region it occupies today. In the peripheral regions, however, it exhibits variations and deviations.

It remains very difficult to answer the question of their origin and the time of their first appearance in the Oceanic region. For example, it is impossible to provide a date for this that would not already be considered historical in our Western chronology; moreover, this date must be later than the spread of the full Neolithic period in Southeast Asia. Polynesian traditions allow us to trace the migratory movements—

to trace the developments among the oceanic islands up to their peak from the 9th to the 14th century, when Polynesian activity and culture also appear to have reached their zenith. It is perhaps not an exaggeration to date the beginning 1,000 or 1,500 years earlier. In that case, some belated remnant of Proto-Indian culture might have been absorbed, and as the first spatial arc drew to a close, the seed of a higher culture could have been carried to certain American peoples living on the shores of the Pacific, from Colombia to Peru.

However, we are here in the realm of conjecture, just as we are with the question of origin. Von Eickstedt posits an origin primarily in northwestern India and a maritime spread, which would also explain the connections to the Eneolithic Paleo-Indian culture, which will be discussed shortly *[cf. von Eickstedt, p. 133 ff.]*.

The hypothesis is all the more appealing in that it takes into account the Indonesian stops and would thus explain the Palæomongoloid influence. However, this is contradicted by the archaic foundation present in Polynesian culture, as well as by the necessity of attributing to these bold conquerors of the Earth's widest ocean the responsibility for transmitting the first agricultural and matrilineal cultures to the Americas.

3. EASTER ISLAND AND ITS PICTOGRAPHIC WRITINGS

Easter Island, called Rapanui by the natives, occupies a special position in Pacific ethnology because of its cultural and racial archetypes, its relative proximity to the Americas, and the size and, especially, the number of its gigantic statues carved from trachyte (moai). Another peculiarity, however, is the small wooden tablets covered with a dense pictographic script, which served the indigenous cult until the middle of the last century. When white people's interest in these objects was aroused, no one among the impoverished, surviving indigenous population could interpret the sacred symbols anymore, and the meaning of these symbols remains unknown to this day. However, numerous exact correspondences were found between the symbols on these tablets and the script visible on the seals from the prehistoric cities of the Indus Valley, Mohenjo-daro and Harappa (which, too, remain indecipherable for the time being). The comparative tables compiled by de Hevesy rule out the possibility that these are mere coincidences, as there are too many symbols, and they are by no means simple. On the other hand, it is evident that the Indian script is more schematic, while the Polynesian script is more pictorial. The transformation of the human symbol into the composite "bird-man" symbol is unique to the latter.

Against a direct historical connection between the two

representations, two objections were immediately raised. First, the temporal gap between an Asian culture dating back at least to the beginning of the 3rd millennium BCE and the modern tablets from Rapanui has raised concerns; furthermore, attention has been drawn to the lack of connecting elements across the vast expanse separating the two regions, as well as the absence of similar artifacts in Polynesia itself. Certainly, the chronological gap is striking. It attests to an extraordinary capacity for cultural preservation on this island lost in the isolation of the eastern Pacific.

Imbelloni, who fully affirms the connections in question and is a thorough expert on Pacific ethnology, correctly notes that it is not necessary to assume a human or cultural migration from the Indus Valley to Polynesia; the two scripts likely originate from a common center of origin somewhere in Central Asia, and from there the writing system could have spread in two opposite directions, grafting itself onto the precocious Proto-Indian urban and metallurgical culture in the west and, much more slowly, being transmitted to the Melanesian and Proto-Polynesian cultures, which remained at a far less advanced stage.

4. THE CURRENT SITUATION

By the time Europeans reached the Pacific Ocean with its many islands, the heroic age of the Polynesians had run its course. The great voyages had come to an end; various islands—including Easter Island—faced severe economic problems due to a lack of resources, and many smaller islands had already been abandoned.

We owe the first estimates of the total population of the Polynesian groups to Cook. However, they are undoubtedly exaggerated (400,000 inhabitants on the Hawaiian Islands, 200,000 on Tahiti, 100,000 on the Marquesas Islands, etc.). The estimates made at the beginning of the last century are much more reliable. In any case, the rapid decline in population is well documented for various island groups, such as the Marquesas Islands:

1804 50,000 natives
1838 20,000 «
1856 12,500 «
1867 7,411 «
1884 4,865 «
1905 3,500 «
1922 1,800 «

The populations of many other groups have declined to roughly the same extent. In some areas, the indigenous peoples have even almost completely disappeared, such as on Easter Island, the South Island of New Zealand, and the Mariana Islands. The most reliable figures indicate that at the end of the 17th century, there were between 1,000,000 and 1,500,000 Polynesians and Micronesians (today about 300,000). A portion of the current population consists of people of mixed descent.

The Tasmanians suffered a tragic fate. At the time of their first contact with Europeans (du Fresne in 1772; the first British penal colony in 1803), their number may have been around 5,000. However, contact with the white settlers turned hostile and bloody almost immediately, and the settlers began a systematic and merciless hunt for the Tasmanians; by 1830, only 500 Tasmanians remained; in 1838, the last groups to surrender to the governor numbered 118 people, who thus brought an end to the "Black War" and were deported to Flinders Island in Bass Strait. Unable to adapt to a life so different from their hunter-gatherer existence, they found peace only in death. In 1874, the last 44 survivors were returned to their homeland. The last chief had died in 1869 at the age of 34; the last full-blooded member of the race, Truganini, died in 1877.

Today, Tasmanian blood is represented only by about 100 "half-bloods" living on Cape Barren Island (Bass Strait). The Australian Aborigines were spared a similar fate only because there was an abundance of land that was difficult for white settlers to access and of little use to them. As the colonial settlements advanced from the coasts, the Aborigines retreated inland. Today, the districts still available to them are the most central and driest, along with some stretches of the hot plains of the north.

In the middle of the last century, South Australia had about 12,000 Indigenous people; by 1909, only two remained. In Victoria, their number has fallen from 7,000 to about 100. Many tribes have become completely extinct, especially in the southeastern states, and a significant portion of the surviving Indigenous people (whom official statistics list at 72,000, including 25,000 of mixed descent) make their living in the lowest-paying jobs around the market towns and cities of the settlers.

The Papuan-Melanesian groups, on the other hand, still form a core that has generally remained largely unchanged, even in demographic terms; new estimates (very approximate for New Guinea) put the number at 1,300,000 individuals.

There is almost no trace left of the ancient Polynesian culture. Only on the Samoan Islands does it continue without excessive change under the protection of a benevolent administration. Generally and rapidly

Christianity and the settlers' languages were adopted alongside the indigenous ones. The natives' seafaring traditions have disappeared. The smaller islands of Melanesia are suffering the same fate, and the more capable members of their populations are now being employed in tropical plantations in various areas of the Polynesian regions. The resistance of indigenous tribes and cultures to the pressure of the encroaching and presumptuous modern colonial penetration is usually related to population density. In Oceania, however, it appears that parts of the indigenous population were indeed already weakened at their very roots, so that the arrival of the Europeans merely accelerated their decline.

POPULATION BIOLOGY OF PREHISTORIC TIMES

BY ILSE SCHWIDETZKY

Physical remains are one of the primary sources**for**the earliest history of humankind. In their scientific analysis, different forms—races, types, and morphological stages of development—are identified, and the course of development can be broadly discerned from the relationships among them. But one must be clear about this: *It is not races or other typological groups that are the agents of historical processes, but always ethnically defined communities—that is, groups of individuals whose cohesion is based not on morphological similarity but on a shared economic engagement with the environment, on common means of communication, customs, and beliefs.* Thus, an anthropological introduction to world history cannot conclude without also examining the anthropology of such communities. At this point, however, only a few remarks will be made about the older human communities; the biology of the major historical and modern peoples, insofar as it constitutes an element of historical development, will be addressed later.

It is widely believed that the successive stages of human development, as well as the regional racial types, arose in conditions of geographical and regional isolation. According to this view, however, the groups in question would have had to be quite small, subject to genetic changes (mutations), natural selection, and adaptation, and thus shaped or reshaped in their biological constitution. If this notion is correct, human races—as groups of forms—must once have coincided with human communities, which are reproductive communities, as is the rule in the animal world. However, we have evidence that human communities came into contact and intermingled with one another very early on, thereby initiating at a very early stage that divergence between race and reproductive community which is so characteristic of humans. In the Mousterian population from Mount Carmel (Palestine), characteristics of Homo neanderthalensis and Homo sapiens are closely intertwined [see J. Kälin, p. 80]; many authors

assume that this can only be explained as the result of interbreeding. The Neolithic population of northern Europe exhibits a certain similarity in some characteristics, which can be summarized under the term “Nordic race.” In detail, however, a great diversity of forms (Asmus) likewise points to an early convergence of small, specifically shaped groups that had developed in isolation. This divergence between race and ethnic community becomes all the more evident the more clearly the ethnos of the groups can be defined. In early Indo-European culture, Nordic elements—primarily derived from the Corded Ware culture—and Mediterranean elements—primarily derived from the Linear Pottery culture—were already converging; and later we encounter Indo-European peoples such as the Hittites, who, racially speaking, share almost nothing in common with the other peoples of the same language family.

All of these indications—which are, at first glance, purely morphological—point to demographic conflicts. Humans have always been migratory, whether, at relatively primitive stages, they moved more passively in tandem with climatic and vegetation zones, food plants, and prey animals [cf. H. Breuil, p. 279; A. Rust, p. 296 ff.; J. G. D. Clark, p. 318 ff.], or whether they actively expanded their habitat as their numbers grew or sought new sources of food and raw materials through their creative ingenuity. Such migratory movements can bring originally isolated groups into contact with one another. Racial mixing presupposes social interaction. Even in the Paleolithic, we must therefore expect processes of “ethnic assimilation”—processes that would play such a major role in the formation of peoples in later history. These consist of individuals moving from one ethnic community to another or of smaller groups coalescing into larger social units. The relatively low level of cultural and ethnic differentiation that existed in the Early Paleolithic likely facilitated processes of assimilation and intermixing. However, as new contacts and intermixing accumulate over the course of history, while isolation and biological differentiation, by contrast, become less effective, the variability of traits and the diversity of types within populations also increase over the course of history. Even among Neolithic populations, certain racial types are generally recognizable as predominant, and the diversity of types is more a matter of a mixed coexistence than of

true mixing, as is characteristic—albeit to varying degrees depending on the region—of more recent populations.

Taken as a whole, a trend can be observed in yet another area that continues to influence the processes underlying the formation of modern peoples: the growth of larger social units from smaller ones. The size of social and economic communities, population density, and economic systems are closely interrelated in this context. Here, ethnology and anthropogeography provide the models by which prehistoric population conditions can also be assessed. The more extensive the food gathering—the more it is oriented toward foraging rather than cultivation and farming—the greater the space required to sustain a family or an individual. This space is greatest among gatherers and low-intensity hunters: For the Bushmen, 55 square kilometers per capita were calculated; for the Australians, 110 square kilometers. However, these are recent areas of poverty and retreat into which the tribes in question were forced by civilizationaly superior peoples, whereas prehistoric population groups at a corresponding economic level had more productive areas at their disposal. Their foraging range was therefore likely closer to that of today's hunter-gatherers in tropical forest regions, among whom the Bambuti, for example, have about 3 square kilometers per capita. When organized hunting takes place in areas rich in game or when agriculture—even in its most primitive form—is practiced, the possible population density increases further; various North American Indian tribes required between 1 and 14 square kilometers per capita prior to European settlement.

It goes without saying that with such extensive foraging, communities can only be small. Hunter-gatherers such as the Phi Tong Luang in Siam or the Kubu on Sumatra forage collectively in groups of a few dozen people. The economic communities of the Upper Paleolithic people could not have been any larger either. Yet even at this economic and cultural level, among modern indigenous peoples there is loose contact between several such small groups, which is expressed, for example, through intermarriage between local groups. Such loose groupings are on the order of a few hundred people. However, even the Upper Paleolithic people likely perceived a sense of community extending to no more than a few hundred individuals. In the Upper Paleolithic population centers of, for example, France or Spain, there—

economic and cultural communities numbering over a thousand. These, however, likely grew not only through excess births (see below) but also through social and ethnic assimilation.

The size of social groups and population density play a decisive role in determining the pace of cultural accumulation processes. The duration of cultural epochs becomes progressively shorter as one approaches the present [see O. Menghin, p. 254]: the Upper and Middle Paleolithic are estimated to have lasted over 400,000 years, the Upper Paleolithic and Mesolithic about 80,000 years, and the Neolithic, by contrast, only 2,000 to 3,000 years. This is certainly not due to a lack of intelligence or inventiveness on the part of earlier generations, but rather, among other things, to the limited opportunity for the further development and transmission of inventions as a result of low population size and density. There is also another cause: a low level of economic development and small social units also imply limited sociobiological differentiation: Each individual is tasked with the immediate procurement of food; the beginnings of a division of labor are minimal, and leisure time is virtually nonexistent. Consequently, special skills and talents have fewer opportunities to be exercised and honed through specialized activities than in larger communities that are already more economically and culturally structured. In the Upper Paleolithic, there is undoubtedly already a greater division of labor and the beginnings of social stratification. The mass finds of tools in all stages of processing—for example, at Timonówka (southern Russia) or Petersfels—point to mass production in workshops and thus to skilled workers. In the eastern Spanish art tradition, rock paintings depict not only individual warriors but occasionally an entire "parade," and the cave sanctuaries of Altamira, Lascaux, etc., are inconceivable without the special status of artist-sorcerers. This social differentiation is a prerequisite for the diverse talents of human beings to be translated into corresponding achievements and thus to serve cultural development.

But this, in turn, requires a larger population and population density, which is only possible at higher levels of economic development involving the intensive use of natural food sources. A larger population can be fed within a smaller area, and with the transition to a sedentary lifestyle, mortality rates in particular decline and the birth surplus increases. Ethnographic parallels demonstrate this impressively. For example, over an observed period of 50 years, the Voguls—insofar as they were hunters—remained at a stable population level or saw their numbers

, while the subgroups that had become sedentary grew rapidly. Overall, among the Siberian tribes, the numbers of hunters, fishermen, and reindeer nomads declined, whereas the numbers of cattle herders increased slightly, and the groups that practiced both cattle herding and agriculture increased significantly in number. The decline in mortality with increasing mastery of nature is also clearly evident in early history. Admittedly, infant mortality—otherwise a good measure of overall mortality—is apparently not always accurately reflected by the finds, since children's skeletons are less likely to survive. However, even at the Iron Age cemetery at Horn (Sweden)—where the probability that all the deceased were recorded is the highest among all find series to date—the proportion of those who died in childhood and adolescence is higher than in modern Europe, but not higher than in European countries at the beginning of the 19th century. One must therefore consider the possibility that child mortality underwent relatively little change until the beginning of the Industrial Age. In contrast, the differences in the proportion of middle-aged individuals (ages 40–60) and, in particular, the elderly (over 60) are significant. Among 20 known Neanderthals and likewise among 102 Upper Paleolithic individuals, none lived to be over 60 years old; among 65 Mesolithic individuals, only one did. In the Neolithic (Silesia), the Bronze Age (Lower Austria), and the Late Iron Age (Sweden), the elderly accounted for about 10% of the deceased; today, however, that figure exceeds 50% in Europe.

Early death also applies to population groups in which violent death plays a minor role. Premature aging due to heavy physical strain and disease is likely a contributing factor. Even Early Paleolithic humans were familiar with disease; it is as old as life itself. However, skeletal remains allow for a diagnosis of only a few diseases. According to these findings, gout and rheumatism were more common in the Upper and Lower Paleolithic periods than they are today; tuberculosis and syphilis, on the other hand, did not emerge until the Neolithic period, and dental caries also increased in frequency and severity as the modern era approached. For women, there was apparently an additional risk of increased mortality during childbirth, as their mortality rate—particularly in middle age—exceeded that of men, in stark contrast to modern times, when women are the longer-lived sex. The still-inadequate protection against the cold and colds, along with poor hygiene, can thus be identified as causes of the higher mortality rate among prehistoric humans.

While it is clear that a decline in mortality and higher average life expectancy are linked to increases in population size and density, very little can be said about the role of birth trends in this development. After all, the high proportion of child and adolescent deaths during the Bronze and Iron Ages also points to high child and birth rates. But these were, of course, already relatively late agricultural populations.

Contemporary hunter-gatherer societies already limit population size through abortion or infanticide.

But it is precisely here that one must hesitate to apply the ethnological parallels of the present to the demographic conditions of the past without further evidence, however interesting it might be to know when the specifically human techniques for limiting the number of children first emerged. We find clear evidence of this in history only among the Greeks, where literary accounts of infanticide are supplemented by the numerous burials of newborns in the cemetery at Gela (Sicily).

Migration, contact, and mixing are thus the demographic processes that begin as early as the earliest stages of human history, while a sociobiological differentiation only becomes apparent in the Upper Paleolithic. Certain processes, however—despite all local and temporal variations—persist from the dawn of humanity through to the most recent historical periods: The tendency toward the formation of larger social groups and greater population density—which also accelerates the cultural process—increasing population mixing due to ever-new contacts and assimilations, and finally, a decline in mortality with increasing mastery over nature.

THE PRIORITY-BASED NAMES OF HUMAN VARIETIES (RACES) IN BINARY AND TRIVIAL NOMENCLATURE

Family: Hominidae
Genus: Homo

Western Alpine — *modern humanity*
Micronesian — *Europids*
Indobrachide — *Blond Race Belt*
Species: Homo sapiens Linnaeus 1758 — *Nordids*
Subspecies I: Homines sapientes albi Gmelin 1788 — *Teutonic-Nordic*
Series A: Homines s. albi xanthochroici ex Huxley 1870
Variety 1: Homo sapiens europaeus Linnaeus 1758 — *Dalofaelids*
Subvariety a) Homo s. eu. nordicus Sergi 1908
b) Homo s. eu. dalofaelicus Peters 1937 — *Fennonordids*
c) Homo s. eu. finnus Fischer 1830 **ex** Desmoulins 1826 — Eastern *Europids*
Variety 2: Homo s. slavonicus (intermedius) Fischer 1829 ex Bory 1825 — *Brown Race Belt*
Series B: Homines s. albi melanochroici ex Huxley 1870 — *Mediterraneanide*
Variety 1: Homo s. pelagius (meridionalis) Fischer 1829 ex Bory 1827 — *Grazil-Mediterranean*
Subvariety a) Homo s. p. mediterranensis Ujfalvy 1896 — *Eurafricanide*
b) Homo s. p. eurafricanus Sergi, 1908 — *Berberide*
c) Homo s. p. atlanticus Fischer 1829 ex Bory 1827 — *Orientalide*
Variety 2: Homo s. arabicus Bory 1825 (partially) — *Indide*
Variety 3: Homo s. indicus Bory 1825 — *Grazilindid*
Subvariety a) Homo s. i. indogracilis Eickstedt 1937 ex 1931 — *North Indian*
b) Homo s. i. indoafghanus Giuffrida-Ruggeri 1912 ex Deniker 1900
c) Homo s. i. indobrachimorphus Giuffrida-Ruggeri 1917
Variety 4: Homo s. occidentalis Fischer 1829 ex Bory 1827 = *Pazifide*
Subvarietas a) Homo s. o. polinesianus Sergi 1908 = *Polyneside*
b) Homo s. o. carolinensis Fischer 1830 **ex** Desmoulins 1826
Series C: Homines s. albi brachimorphi Giuffrida-Ruggeri 1912 = *Bangrassengürt* — *Alpine*
Variety 1: Homo s. alpinus Lapouge 1899 (ex Linné 1758)
Subvariety a) Homo s. a. cevenolicus Eickstedt 1937 ex Deniker 1900
b) Homo s. a. lappo Erxleben 1777 = *Lappid*
Variety 2: Homo s. dinaricus Lapouge 1899 ex Deniker 1897 = *Dinaride*
Variety 3: Homo s. syriacus Kraitschek 1902 ex Chamberlain 1899 — *Armenide*

= *Old European* = *Turanide*

Variety 4: Homo s. eurasicus Sergi 1908

Subvarietas a) Homo s. eur. turanicus Eickstedt 1937, based on Montandon 1928 = *Aralide*

b) Homo s. eur. pamiriensis Giuffrida-Ruggeri 1912 = *Pamiride*

Series D: **Homines** s. albi protomorphi Giuffrida-Ruggeri 1912 ex Stratz 1904

Variety 1: Homo s. veddalis Haeckel 1898 ex Sarasin 1893 = *Weddide*

Subspecies a) Homo s. v. ceylonensis Sergi 1908 ex Sarasin 1893 = *Wedda*

b) Homo s. v. gondicus Eickstedt 1937 ex 1931 = *Gondide*

c) Homo s. v. malicus Eickstedt 1937 ex 1929 = *Malide*

d) Homo s. v. toala Giuffrida-Ruggeri 1912 ex Sarasin 1905 = *Toalide*

e) Homo s. v. siamesis Sergi 1908 = *Ostweddide*

Variety 2: Homo s. curilanus Fischer 1830 ex Desmoulins 1826 = *Ainuide*

Subspecies II: Homo sapiens leiotrichi Eickstedt 1937 ex Bory 1825

Group a: Homo sapiens asiaticus Linnaeus 1758 *Mongoloid*

Series A: Homines s. asiatici arctici Haeckel 1868 *Polar Belt*

Variety 1: Homo s. hyperboreus Bory 1825 *Siberian*

Subvariety a) Homo s. h. ugrianus Gregory 1921 ex Deniker 1889 *West Siberian*

b) Homo s. h. palaeasiaticus Gregory 1921 Eastern *Siberian*

Variety 2: Homo s. groenlandus Fabricius 1780 *Eskimoid*

Series B: Homines s. asiatici badii Gmelin 1788 *Northern Mongoloid*

Varietas 1: Homo s. tatarus Erxleben 1777 = *Tungid*

Variety 2: Homo s. sinicus Bory 1825 = *Sinic*

Subspecies a) Homo s. s. borealis Liu 1937 *Northern Sinic*

b) Homo s. s. medius Liu 1937 = *Central* Sinic

c) Homo s. s. meridianus Liu 1937 = *Southern* Sinids

Series C: Homines s. asiatici meridionalis Giuffrida-Ruggeri 1912 = *Southern* Mongoloids

Variety 3: Homo s. palaemongolicus Eickstedt 1937 ex 1934 = = *Palemongoloids*

Subvariety a) Homo s. p. palaunicus Eickstedt 1937 ex 1928 *Palaungids*

b) Homo s. p. nesidus Eickstedt ex Haddon 1924 (partially) *Neside*

Series D: Homines s. asiatici subnigri Hunter 1775 *Khoisanids*

Variety 1: Homo hottentotus Bory 1825 *Khoisanid*

Subspecies a) Homo s. h. austroafricanus Fischer 1830 ex Desmoulins 1826 partim = *Khoide*

b) Homo s. h. huzuana Fischer 1830 ex Demoulins 1826 = *Sanide*

Part b: Homines sapientes americani Linné 1758 = *Indianide*

Series D: Homines s. americani cuprei Gmelin 1788 = *North Indianide*
Varietas 1: Homo s. pacificus Eickstedt 1937 ex Deniker 1900 = *Pazifide*
Varietas 2: Homo s. centralis Eickstedt 1937 ex Deniker 1900 = *Centralide*

Varietas 3: Homo s. colombicus Bory 1825 = *Silvide*

Subvarieties a) H. s. c. planidus ex Imbelloni 1941 = *Planide*

b) H. s. c. apalacidus ex Imbelloni 1941 = *Appalacide*

Variety 4: Homo s. marginalis Eickstedt 1937 ex 1934 = *Margide*

Series E: Homines s. americani mesembrini Eickstedt 1937 = *South Indianide*
Variety 1: Homo s. andinus Giuffrida-Ruggeri 1912 = *Andide*
Varietas 2: Homo s. patagonus Bory 1825 = *Patagonide*
Variety 3: Homo s. brasilianus Eickstedt 1937 ex d'Orbigny 1839 = *Brasilide*

Varietas 4: Homo s. lagoanus Eickstedt 1937 ex Hansen 1888 = *Lagide*
Variety 5: Homo s. lago-maritimus Eickstedt 1937 ex 1934 = *Fuegide*

Subvarieties a) **H. s. l. fuegidus** Eickstedt ex Imbelloni 1937 = *Southern Fuegide*

b) H. s. l. huarpidus Eickstedt ex Canals-Frau 1950 = *Huarpide*

Subspecies III: *Homines sapiens afri* Linné 1758 = *Negride*

Series A: Homines s. europoafri Peters 1937 = *Contact Belt*
Variety 1: Homo s. africanus Sergi 1908 = *Ethiopide*

Subvarietas a) Homo s. a. nuba Haeckel 1879 = *Northern Ethiopids*

b) **Homo s. a. abessomalis** Eickstedt 1937 = *East Ethiopian*
c) **Homos. a. massaicus Eickstedt**1937 = *South Ethiopian*
d) H. s. a. saharicus ex Eickstedt 1943 = *Central Ethiopian subspecies*

e) H. s. a. maurusianus ex Eickstedt 1943 = *Western Ethiopian*

Variety 2: Homo s. indomelanicus Eickstedt 1937 ex Deniker 1900 = *Indomelanids*

Subvarieties a) Homo s. i. karnaticus Eickstedt 1937 = *Southern Melanids*

b) Homo s. i. kolidus Eickstedt 1937 **ex** 1931 = *Northern Melanids*

Series B: Homines s. cafro-madegassi ex Lesson 1827 == *Western Negrids*

Variety 1: Homo s. niger Haeckel 1898 = *Sudanide*
Variety 2: Homo s. niloticus Montandon 1937 = *Nilotide*

Varietas 3: Homo s. cafer Bory 1825 = *Kafride*

Varietas 4: Homo s. palaeniger Montandon 1937 ex Eickstedt 1934	= *Palänegride*
Series C: Homines s. alfuri ex Lesson 1827	*Eastern Negrids*
Variety 1: Homo s. papuensis Fischer 1829 ex Bory 1825	*Neomelanesids*
Variety 2: Homo s. melaninus Bory 1825	*Paläomelanesids*
Variety 3: Homo s. australasicus Bory 1825	*Australide*
Series D: Homines s. pygmaei Giuffrida-Ruggeri 1912	*Pygmide*
Variety 1: Homo s. akkalis Haeckel 1898	*Bambutids*
Variety 2: Homo s. negrito Kleinschmidt 1922	*Negritide*
Subvarieties a) Homo s. n. philippinensis Giuffrida-Ruggeri 1912	*Aëtide*
b) Homo s. n. semang Schebesta 1937	*Semangide*
c) Homo s. n. mincopaeus Pycraft 1925	*Andamanide*

EARLY HISTORY

FUNDAMENTAL QUESTIONS OF PREHISTORY

BY OSWALD MENGHIN

1.

The history of humanity begins with the process of human evolution. This process itself—that is, the sequence of events that led to the emergence of humankind—lies at the very edge of historical research, or more specifically, of prehistoric research. Insofar as this involves purely biological phenomena, zoology and paleontology must address them. The problem of the human mind, however, must first and foremost be left to the expert in the field of psychology in the broadest sense of the word, all the more so because pure biologists, unfortunately, often fall short in their statements about the psyche. All too often, their worldview is still that of the period around 1870, when, as is well known, Faust's Famulus had come so far as to solve all the world's mysteries. To the detriment of this overbearing positivism and naturalism, the number of those who exercise greater caution when confronting the decisive questions of existence is growing today, and who believe that the purely mechanistic view of the world as a whole is counterbalanced by another view that is at least its equal. Awe for the unexplored and the unknowable is on the rise again. This also applies to the fields of anthropology and prehistory (*see A. Portmann, p. 28 ff., J. Kälin, p. 98*).

In practice, however, despite all reflection on ultimate questions, this thinking is based on preconceived positions and guided by the hope that, in the course of reflection, these preconceptions will be justified and replaced by proof. In our view, this hope can only be fulfilled if the mind draws upon not only its rational but also its emotional faculties. But this also means that the formation of a worldview ultimately depends just as decisively on an act of the will as on an act of the intellect. With this decision, the individual assumes a responsibility that is immense, both for himself and for the whole. He assumes, to the extent that it is within his power, shared responsibility for the earthly world order and, at the same time, for everything that might concern us beyond what is graspable through experience.

Humanity first became aware of this responsibility and its magnitude in the 6th century B.C., most profoundly, perhaps, among the Greeks. But the spirit of this intellectual impulse sparked the highest intellectual excitement wherever a mature urban culture had created the conditions for it—that is, from southeastern Europe through the Near East and India all the way to China. In our view, this marks the beginning of a new eon in humanity's intellectual development: the age of full-fledged culture, of humanity's critical-contemplative existence—the world period of philosophy, whose often degenerate offspring are the individual sciences. From a value-judgmental standpoint, *the prehistory of humanity* is, in fact, everything that lies intellectually prior to this stage of development, whether it lags behind chronologically—such as the world of living primitive peoples—or is historically advanced in a technical sense—such as the advanced civilizations of the ancient Orient.

We call "historical" in the technical sense that which is accessible to us from human development primarily through written sources, regardless of the intellectual stage to which it belongs. It is very limited in terms of time, but so rich in content and so full of direct relevance to our lives today that it threatens to obscure our view of just how far back into the past we must reach if we truly wish to get to the root of things and attain a full understanding of what exists in the present. Yet today, more than ever, we demand and need such insight. For nothing remains unchallenged of what humanity in the philosophical age believed it could rely on—from the right to physical life and autonomous personality to the highest achievements of intellectual labor and compassionate love for humanity. The revaluation of values begins to end in non-valuation, in the rejection of the very concept of value. For the philosophy of despair in all values—the anti-metaphysical existentialism—significantly, only one formal category remains as the last possibility of inner affirmation: resolve without reason, the heroic stance without reference to value.

So, since we have come so wonderfully far, the question arises in many minds: Are these really the last possible, the definitive answers to humanity's millennia-long yearning and struggle for truth, justice, beauty, and happiness? Are there no other perspectives left? Aristotle says that the essence of things could be easily recognized if one knew their origin. Might we perhaps gain other, more accurate insights and standards,

if we descend into that depth from which humankind emerged, where the origin of all that has come to be lies? Might knowledge of the beginnings perhaps cast a clarifying, reconciling, and redeeming light upon all those things that today seem to threaten us only as immeasurable and inevitable fates, such as: race, culture, language, ethnicity, state, law, property, custom, morality, style, worldview, and religion?

This question has already been answered with a very decisive "yes"—namely around 1870, when the natural sciences had reached a peak of epistemological optimism. It was the answer of materialist evolutionism, which believed that human beings and their minds must be understood exclusively in terms of nature, based on biological and prehistoric facts, and thus ushered in the development whose final phase we are now experiencing [see J. Kälin, p. 46]. It became the scientific foundation of Marxism and, with it, an intellectual world power. In light of the lofty goal of Marxist socialism—to restore the deeply shaken economic justice on earth—this connection must be described as truly tragic. The tragedy lies in the fact that the methodological foundation of anthropological evolutionism, at least as far as the spiritual and cultural realm is concerned, has not withstood the progress of research. What the most eminent representatives of prehistoric and ethnological science at that time—led by Lewis H. Morgan—taught about the origin and development of society and property was later proven to be almost entirely erroneous; the same applies to their views on the origin of religion and morality. The researchers of that era had a thorough command of the factual material available at the time and knew how to apply it with great insight. However, so much new information has since come to light, and the methods of archaeological and ethnological source collection have been so significantly refined, that, looking back, we find the knowledge of the material from the previous century downright meager.

Even more important, however, are the advances made in the field of historical analysis of sources. Around 1870, there were still no objective criteria available for determining the age of ethnological phenomena; instead, their chronological ordering was based on subjective, psychological criteria, such that what was perceived as more primitive according to our European sensibilities was considered older. It was believed that this was nothing more than applying the methods used in the field of bio-

biology—principles that were entirely meaningful because they were supported by geological stratigraphy—to humans and their culture in a logical manner; moreover, the upward development of material culture, which had become tangible through excavations, seemed to justify such a methodology. It has turned out, however, that human culture—the more it pertains to fields closely tied to the spirit—is all the less subject to mechanical laws of development. As a result, we have learned to make a clear distinction between "primary" = "original" and "primitive" = "wild." The first two terms refer to a chronological determination that can and must be objectively established; the latter two involve a value judgment and will therefore always possess a somewhat subjective character. "Primary" need not by any means be "primitive" in the sense of our modern sensibility; "primitive," in turn, need not be ancient. When we clarify these concepts and facts in this way, something very curious emerges: the sequence of stages in human civilization and its individual manifestations, as elucidated by Morgan, is essentially based on value standards that are derived—more or less consciously—from Christianity. When it comes to the spiritual realm, these standards have a moralizing, rather than a scientific, character. Thus, it is one of the many paradoxes of the history of human thought that the ethnological foundations of Marxist socialism are methodologically based on the application of criteria that ultimately stem from the sphere of bourgeois-religious thought.

This, however, brings us to the important question of whether prehistoric research today is truly better equipped to offer what is demanded of it: namely, a reliable picture of the development of human conditions that predate all written history. It is clear that prehistory, like any other science, has not reached the end of its work and never will. Science, after all, is not truth itself, but rather an intense search for truth using the probe of criticism and through the systematic organization of the respective research findings. What constitutes genuine knowledge—that is, the enduring foundation of our understanding of the world as a whole—can usually be assessed only after a considerable amount of time, often only after generations of intellectual struggle. The more general the questions at hand, the more uncertain the results of research become. It therefore seems to me entirely questionable whether the natural sciences—even the so-called exact sciences—are in a better epistemological position than the humanities. For when it comes to the nature of things, the former may face even greater uncertainties than the latter.

Modern prehistory does indeed share in the shortcomings of human research, but it is no more subject to them than any other branch of science. Armed with diverse, in some cases nearly exact methods—such as stratigraphy—and an immense wealth of facts, it is today fully justified in weighing in on the great questions of humanity. This will be further substantiated through a brief discussion of the status, structure, and methods of prehistoric research.

2.

The *status of prehistory* within the realm of the sciences can be defined in various ways. As is well known, there is no system of sciences that could be constructed on the basis of a single criterion of classification and in which every "discipline" would have its fixed place. Rather, the individual sciences have been established on the basis of very diverse theoretical perspectives and practical needs and can often be integrated into more than one context. As far as prehistory is concerned, its integration into an overarching framework has been approached primarily from two perspectives: the anthropological and the historical.

The anthropological aspect came to dominate after the mid-19th century, when the study of humans as natural beings was at the center of intellectual debate. At that time, anthropological societies were formed in all of Europe's major capitals, uniting physical anthropology, ethnology, and prehistory into a triad, in the light of which it was hoped that the evolutionist hypotheses about primitive humans—preformed in bold flights of thought—could finally be clarified. This conception remains influential to this day, especially in America, but to some extent also in Western Europe. At the same time, however, the purely humanities-based approach to human prehistory has steadily gained ground, particularly in Germany, where the anthropological triad is still traditionally maintained in the old scientific societies but has undergone a shift in emphasis in academic research and teaching. Physical (or morphological) anthropology has broken away and entered into a closer association with the natural sciences, toward which the focus of its purely biological interests is drawn; in contrast, ethnology and prehistory, in their predominant capacity as cultural sciences, have integrated themselves into the circle of historical disciplines. Racial history and the study of ancestry hover as a shared domain between the two scientific groups. As already indicated, both perspectives are fundamentally possible and legitimate (see S. Sergi 1947). It depends on the intellectual climate of the moment as to when and where one or the other is favored. This is determined not by theoretical-systematic considerations, but by actual intellectual needs and orientations. Despite all claims and evidence to the contrary, these have been predominantly historical-metaphysical in Central Europe over the past fifty years, and biological-positivist in Western Europe and its intellectual projections overseas.

From an anthropological perspective (cf. J. Imbelloni 1949), the concept of "prehistory" essentially coincides with prehistoric archaeology. Archaeological finds reveal that the older they are, the less they reveal about human intellectual culture, from which it was concluded that the intellectual state of early man was just as "primitive" as his stone tools. This is a conclusion drawn from silence, which once seemed to be justified by the analogy of ethnological facts. The moment this source of error was eliminated and ethnology turned to

had reached the opposite conclusion, that inference drawn from the archaeological material would also have had to be corrected. However, numerous researchers with an evolutionary and naturalistic outlook have been unable to bring themselves to do so to this day. This reveals the danger of anchoring prehistory within the realm of natural scientific thought: in doing so, the historical and humanistic contexts of meaning tend to be neglected.

One example of a naive intrusion of natural-historical thinking into the realm of the humanities is "ethnolysis" (see A. C. Blanc 1942/43, 1948). The danger that these views will gain traction is, however, minimal; for anyone with even a basic knowledge of cultural history will immediately be able to discern the fragility of Blanc's arguments. Furthermore, Blanc seems to have remained unaware that biological research has made very significant concessions regarding Vavilov's gene-center theory, which is supposed to be the biological parallel to his ethnolysis (see, among others, E. Schiemann 1939, R. Freisleben 1941).

When considered within the framework of historical research, the concept of prehistory takes on a much broader and, it seems to me, truly legitimate scope. In this context, prehistory constitutes the first chronological phase of universal history and thus, at the same time, the indispensable cornerstone of all historical insight. Here it is a comprehensive interdisciplinary field that encompasses numerous individual disciplines and draws upon others. It is the science of humankind as spiritual beings in their stages of development prior to attaining the capacity for philosophical and scientific thought. Even in its branches most closely tied to biology—the study of descent and the history of races—the spiritual aspect plays an essential role, however much proponents of mechanistic worldviews attempt to obscure this, in part for non-scientific reasons *[see A. Portmann, p. 25]*.

The individual disciplines serving universal prehistoric research have been established on the basis of the various formal objects to which they are directed. Their diversity, in turn, is based primarily on the specific characteristics of the source materials available for elucidating the earliest stages of human history. It is, of course, possible that new branches of prehistoric research will emerge, just as some of the currently existing ones are still quite young and underdeveloped. The emergence of new specialized disciplines, just as their consolidation into higher-level units, is often determined by the intellectual and practical interests of a given era. It would be conceivable, for example, that the need for a paleosociology as a distinct branch of study might arise.

Given the current state of scientific development, the disciplines briefly characterized below should be considered essential to the structure of prehistory, although, as emphasized, each of them may also appear within a different framework.

(1) Paleoarchaeology or prehistoric archaeology. It investigates the remains of human cultural activity from the period before the onset of written records. Since it is the only cultural science that deals with source material originating directly from the earliest prehistoric times, it is often referred to simply as prehistory *[or, more recently, as early history]*.
(2) Ethnology or ethnography. It studies the culture of living or recently extinct peoples who do not belong to Western high culture. Ethnography is usually understood to refer to the source-based, descriptive branch of this discipline.
(3) Folklore. It studies the peoples belonging to ancient and Western high cultures with regard to cultural phenomena that can be regarded as remnants of earlier conditions or that continue to develop in the spirit of older traditions.
(4) Linguistic archaeology or the study of ancient languages. It investigates languages with regard to what they reveal about cultural conditions of earlier, particularly prehistoric, times.
(5) The history of language, or linguistics in the narrower sense of the term. It studies languages with regard to their development and their linguistic relationships.
(6) Glottogony. It investigates the origin of language.
(7) Historical anthropology or the history of races. It studies the origin, **characteristics**, and spread of the human race.
(8) Anthropogony, or the study of human origins. It investigates the origin of the human body.
(9) Paleoethnology or prehistoric tribal studies. It investigates the names, origins, migrations, settlements, and kinship relationships of peoples in the period prior to written records.
(10) Paleopsychology. It investigates the development of human mental life from its earliest beginnings to the emergence of philosophical and scientific thought.

Prehistoric research must also maintain the closest possible contact with a number of related or neighboring disciplines that, in part, deal with the same source material, such as the various branches of Oriental studies, Egyptology, and classical archaeology.

3.

In every science, success or failure in achieving the research goal depends on the correct analysis of the initial phenomena provided by the source material—the empirically available facts. The sources of prehistory are divided into natural scientific, linguistic, and cultural-historical sources, whereby we may also include written testimonies among the latter. Each of the prehistoric disciplines listed makes use of sources from all three categories, though with an emphasis on one or the other. Thus, paleoarchaeology relies primarily on a specific subset of cultural-historical sources, namely the remains of human cultural activity preserved in the ground. At the same time, however, it must —at least as an auxiliary science—draw upon all other types of cultural-historical sources. Incidentally, a single source may possess multiple qualities.

Domestic animal bones and deformed human skulls are just as much cultural-historical objects as they are biological ones; every word in a language has simultaneously a purely linguistic, a cultural-historical, and a physiological aspect. Sources that are unambiguously classified in terms of their category may be ambiguous in their informative value: a human statue is undoubtedly a cultural artifact, but it can also document essential aspects of racial history.

Since each discipline has its own specific research goal and unique combination of sources, there are, of course, as many methodologies as there are individual sciences. But it is clear that disciplines with related research objects and relying on related types of sources will also be methodologically closely related in some way. It may happen that one discipline is methodologically more transparent or more advanced because it was able to operate under more favorable external and internal conditions; in this case, the methods of one discipline can shed light on those of the other. It must be possible, in general, to abstract certain common methodological principles for a group of closely related disciplines—such as the various branches of cultural history—that is, a logically sound foundation for analysis, from which to deviate carries the risk of falling into shortcomings and errors in the evaluation of sources. This insight is particularly valuable in our context because in a very important area of prehistoric research—ethnology, of which folklore is only a specialized branch— numerous methodological disagreements still prevail—disagreements that might never have arisen had one focused on the entirety of cultural-historical methodology and reflected on the methodological requirements inherent in all branches of cultural-historical research. Since, as far as I can see, a discussion on this subject is lacking, I consider it appropriate to say a few fundamental words about it here. I do not intend to present a fully developed cultural-historical method; however, I do hope that the framework offered here will make it easier in the future to discuss the relevant aspects in a logically ordered sequence. The nature of the subject necessitates that these discussions cannot proceed without a certain degree of polemic.

Modern cultural-historical research has taken two main directions in its specific objectives. One focuses, at least potentially, on the entire cultural output of a specific segment of development that is defined by time, space, nationality, social context, the availability of sources, or by several of these

factors. The second main direction is limited solely to the study of a single cultural field, although spatial, temporal, and national limitations usually come into play as well. The first group includes disciplines such as paleoarchaeology, ethnology, folklore, Oriental studies, and Egyptology; the second includes the history of art, literature, music, science, economics, social customs, religion, and many other branches of cultural-historical research that have developed more or less independently.

Insofar as a systematic approach is concerned, both approaches are governed by a certain basic analytical framework. It is based on the simple fact that, when investigating any cultural-historical phenomenon, the same fundamental questions must be asked before proceeding to synthesize the findings. The questions—or, more accurately, sets of questions—are:

1. What evidence of a given set of facts is available?
2. What historically relevant phenomenon can be observed in this set of facts?
3. What factors account for the emergence of these phenomena?

The answers are provided by *source analysis*, *phenomenon analysis*, and *causal analysis*.

These three stages of analysis must be based on empirical observations and, as far as possible, apply purely objective criteria. Of course, the researcher will not be able to completely avoid more or less subjective judgments at any stage of the work. Often, limitations in research resources or gaps in the sources compel him to do so. The weight of such personal views depends entirely on the researcher's personality: on the one hand, on the degree of intuitive ability; on the other, on the prudence imparted by a wealth of knowledge and experience. Together, these two factors produce that "intuition" that tends to distinguish great researchers and protects them from serious errors of judgment when sufficient evidence for objective insight is lacking.

The danger of introducing unwarranted subjective perspectives grows with each stage of the analysis. It is most acute during the analysis of causes, because this stage involves deciding on very general issues, such as the extent to which economic, political, psychological, or racial factors influenced or took precedence in the formation of a cultural phenomenon.

For example, anyone who from the outset denies the existence of race-bound spiritual forces or asserts the inherent priority of economic factors will, in the analysis of causes, adopt a standpoint that can hardly be described as objective. In doing so, they proceed from theories that may correspond to a prevailing doctrine and for which much can be argued. However, these theories must not be allowed to influence the analysis of the phenomena

if true insight—rather than circular reasoning—is to be achieved. In analysis, induction alone has the final say. Deduction and speculation are the domain of synthesis and the philosophy of culture. They may provide inspiration for analysis, but must never dominate it. It is clear that we all repeatedly fall short of these strict requirements. But this says nothing against their correctness, any more than sin speaks against the moral law. One can set logic and natural law aside. That is even considered modern. But in the end, one pays for it with failure.

When we now turn to the individual stages of analysis in the field of cultural-historical sciences, the strictly systematic, sharply structured approach we are discussing here must not lead us to assume that, although there is essentially an architectural framework, these stages operate without influencing one another. All results obtained through the analysis of sources, phenomena, and causes can be related to one another and serve to clarify one another.

Determining whether an object has been tampered with or forged is, for example, a matter for source analysis—more specifically, source criticism. However, source criticism will often only be able to fulfill its task if it draws upon the full wealth of experience offered by the analysis of phenomena and causes. A minor stylistic error, identified on the basis of experience in formal analysis, can expose a technically flawless forgery. Even more significant is the cross-fertilization among the various branches of phenomenon analysis. When we work with "typological" and "chorological" methods in the field of chronology, this amply demonstrates the value of the various analytical processes to one another.

Despite the above, it must be emphasized that the analysis must proceed in the order of the three main stages given above; for the subsequent set of questions can only be successfully addressed once the earlier one has been clarified in its basic outlines. We need not dwell here on *source analysis* or source criticism. For although it is often treated rather haphazardly, its requirements are, in themselves, fairly well known and accepted. Source analysis encompasses the identification, description, and critical evaluation of sources. It is an indispensable prerequisite for all historical research, though its nuances vary considerably across individual disciplines.

4.

The most hotly contested methodological problems in the cultural-historical sciences lie in the field of *the analysis of phenomena.* If, following Kant, we define an objective phenomenon as a sensory entity shaped by time and space, it follows naturally that the analysis must take three aspects into account: the conceptual-qualitative, the spatial-quantitative, and the temporal-genetic—or, as one might also put it: the *how*, the *where*, and the *when* of cultural-historical phenomena.

If one examines the practice of cultural-historical research, one can observe that this requirement is often inadequately met. The analysis of phenomena is all too often conducted in a one-sided, not to say arbitrary, manner; that is, only a portion of the phenomena presented by the sources is taken into account, while the rest is neglected. This is understandable and forgivable in the early stages of a discipline, since the approach from which it originated exerts a dominant influence for a long time, and the full scope of the problems can only be surveyed gradually. In various branches of cultural-historical research, this has led to the most heated disputes, for example in art history, where Strzygowski's efforts to systematically develop a universal scale of values met with profound incomprehension—which, however, was partly triggered by shortcomings in his methodology regarding source criticism and chronology. The methodological disputes in the field of ethnology had even wider and more complex repercussions, for here more than two factions emerged. In contrast to paleoarchaeology, which has a method recognized and applied by almost all experts, even if it has never been exhaustively codified (see the approaches of K. H. Jakob-Friesen in 1928 and Ch. Pescheck in 1950), ethnology is blessed with a wealth of methodological writings, each of which endeavors to discredit the fundamental guiding principles of the others. Anyone who observes this polemic impartially will soon recognize one of its main causes. It stems from the fact that many ethnologists are unable to subordinate a personal or time-bound intellectual interest to the demands of systematic work.

One of the most glaring examples of this is provided by B. Malinowski when he attempts to present "functionalism" as the sole valid research method in ethnology. This is not meant to detract from the legitimate claims of functional research in the cultural-historical sciences.

The order in which the analysis of the three aforementioned aspects is to be conducted depends on the availability of sources in the individual disciplines. The analysis will advantageously always begin with those phenomena for which the source material provides the most reliable documentation—paleoarchaeology, for example, with the chronological-genetic aspects, and ethnology with the conceptual-qualitative ones.

5.

From *a conceptual-qualitative* perspective, cultural analysis deals with the factual development of human cultural achievement, which must be traced in all its ramifications. Starting from the individual forms, the analysis initially aims to provide a systematically structured overall picture of the respective cultural field under investigation. Naturally, the focus is on the forms themselves, but the processes of formation are by no means set aside. Cultural-historical research or the study of forms (typology) encompasses an immense abundance of phenomena, and doing justice to them all is, of course, an almost superhuman task.

The creation of a cultural system is therefore an urgent task—

for the cultural historian, for he needs such a conceptual system not only to organize his material but also to be able to approach the initial phenomena with a questioning mindset.

A pot, for example, is primarily a vessel and conceptually falls into the category of tools used in economic life. But that does not exhaust its meaning. It is a technical product, the result of a work process. It can be an object of trade. It is a vehicle for artistic form and decoration. It can serve a function in the social or ritual sphere. Moreover, in all these respects, it is part of an ongoing development. The pot will speak of all these things only to those who know how to question it about them—that is, to those equipped with the experience that imparts practical and theoretical knowledge. But anyone who would claim that only one of these aspects is of scientific interest—for example, the social function—is simply a fool.

As for the nature of individual cultural complexes and the challenges of researching them, the cultural historian must always seek information from the branch of research that deals specifically with them. Every branch of the study of cultural forms is, in fact, a borderland between cultural history and one or more other disciplines. However, if one observes the working methods of so many prehistorians and ethnologists, one can see that, while they generally have a sense of this situation when it comes to aspects of material culture such as hunting, agriculture, animal husbandry, and technology, the moment, however, that social forms and the products of spiritual culture come into play, they tend to address the issues in a very amateurish manner, because they lack contact with the relevant specialized disciplines. Thus, people write at length about prehistoric religion as if there were no history of religion, psychology of religion, or comparative religion. Similarly, what many prehistorians and ethnologists claim to know about the art of prehistoric times or "primitive" peoples often reveals little familiarity with the advances in art history, even if it may be well-grounded in source criticism and occasionally offer valuable insights for the analysis of artistic phenomena.

The problem of the cultural system has not yet been fully, but largely, resolved (see Meister 1943 and 1951). Thus, the objective division of culture into the three major creative spheres or zones—economy, society, and education (material, social, and spiritual culture)—may well be considered firmly established. It corresponds to the primary needs of human nature, namely: preservation, order, and spiritual satisfaction ("reassurance," as Moritz Hoernes put it). Accordingly, at first glance, it appears to have a strongly utilitarian and materialistic character. However, this impression is immediately dispelled once one realizes that, although each of these spheres corresponds to physical necessities and sensory-animalistic drives, it manifests itself in very diverse and often by no means expedient concrete forms, whereby human culture differs fundamentally from the achievements of animal species. The underlying cause of this fact is not nature, but the human spirit—above all, the human will.

This polarity between nature and spirit determines, on the one hand, the diversity of forms of objectification and, on the other hand, the division of each of the three cultural domains into a more material part—the "objectified spirit," that is, the economic products, social forms, and educational goods that directly serve the satisfaction of human needs—and a purely ideological part, which encompasses the guiding values. In between lies the realm of procedures—that is, purposefully organized activities aimed at achieving a goal—and of functions—that is, the activities of the parts of an organism in relation to the whole and in accordance with its purpose. Although this dimension is often difficult to delineate, it nonetheless deserves a distinct place in the structural organization of the cultural system.

The final step of the conceptual-qualitative analysis focuses on the genealogy of types—that is, an overview of the dynamics of factual cultural development. It requires the incorporation of insights that have come to light through the examination of the temporal aspect; for while factual analysis is capable of establishing series of types whose validity is based on certain laws governing human intellectual activity, There are, in fact, limits to human beings' ability to develop new forms: they hardly ever invent anything fundamentally new, but rather modify what already exists by adding to or subtracting from it. Since both enrichment and simplification are possible, one can indeed establish useful typological series when sufficient source material is available; however, the direction in which the series proceeds, where it begins, and where it ends cannot be determined from the series itself. This requires a criterion outside of typology, and only chronology—not chorology—can provide it. Although it may be more common for the oldest form of a type to have a smaller geographical distribution than the younger variants, the opposite is also possible. However, the moment the direction of development is established chronologically, the type series takes on extraordinary significance for cultural genealogy and becomes, so to speak, its very soul.

6.

The *spatial-quantitative* aspect of cultural history is based on the fact that every cultural form is spatially bound, i.e., it has a distribution. However, this spatial binding applies not only to individual forms but also—and this is one of the most important fundamental phenomena of all cultural-historical research—to entire communities of forms. The individual forms are thus not isolated but extend across their respective spaces in specific groupings. This branch of analysis is commonly referred to as the theory of groups, units, or cultural spheres

(chorology) *[see W. Schmidt, p. 386]*. The primary task of group theory is to identify related societies of forms or types, to trace their distribution in space, and finally to systematize them—that is, to group them into higher-level units. Unfortunately, cultural history has not yet established a universally accepted terminology for the orders of magnitude of cultural units.

In addition to spatial extent, cultural forms are also associated with other types of quantities that have nothing to do with cultural diffusion: (1) Purely physical volume, insofar as material cultural elements are concerned; this is the subject of source criticism (description); (2) the absolute frequency of a type, i.e., the numerically recorded number of its actually existing representatives; (3) the relative frequency of a type in relation to others; these two types of quantity also apply to some immaterial cultural elements (e.g., folk songs, festivals, games); (4) the richness of one culture in terms of types compared to another culture; in this case, the assessment must, at least in principle, extend to all existing cultural elements. The last three types of quantity mentioned above have primarily functional significance and thus fall within the scope of morphology. On an entirely different level lies the criterion of quantity, which will be discussed in detail in this section. It involves determining the number of identical or related cultural elements shared by two or more cultural units.

There are likely few researchers who deny the actual existence of cultures and languages. The close internal connection between these two fields makes the methods of their historical investigation exceptionally well-suited to shedding light on one another; and if this parallelism had always been kept in mind, many fundamental objections to cultural-historical ethnology would have been avoided. However, the cultural-historical facts alone are entirely sufficient to adequately clarify the core methodological problems of this aspect of phenomenon analysis.

If we—to cite some particularly vivid examples—consider, on the one hand, the early dynastic cultures of Sumer and Egypt, and, on the other hand, contemporary English and North American cultures, no one will doubt that (1) temporal and spatial nuances (groups) within these four units do not call their individuality into question; (2) that the cultures of the first and second pairs share more commonalities among themselves than either pair does with the other. No one will therefore object to grouping them under umbrella terms such as

the ancient Near Eastern cultural sphere for one pair and the Anglo-American cultural sphere for the other. (3) It is also evident that the connection between the first pair and numerous subsequent ancient Eastern cultures, as well as between the second pair and the preceding culture of the West, is very close, whereas such a connection between either pair and, for example, the Turkish-Ottoman culture is only very slight. (4) All of this holds true even though ancient Eastern culture has much in common with Turkish culture, whereas the latter shares only a narrow strip with ancient Western culture; although the Western cultural sphere carries on numerous ancient Eastern cultural elements, such as the sexagesimal system, the religion of the stars (albeit relegated to "superstition"), not to mention technical matters; although tea, originating in China, plays an extraordinary role in the diet and social life of the Anglo-Saxons, etc.

From these observations, numerous guidelines for the study of prehistoric cultural units can be derived, above all the fact—crucial for the development of methodology—that, in the course of historical development, relatively static complexes of forms of various scales repeatedly emerge; these are objectively discernible despite all the relationships and transitions caused by dynamic processes and exhibit a tendency to spread spatially, yet entirely different complexes of forms may also succeed one another within the same space.

The regionalism prevalent in North America is particularly at odds with this latter insight; as long as it is in any way possible, it takes the internal cultural continuity within a more or less natural space as the starting point for historical order and attaches as little weight as possible to external influences. This approach was used, above all, to defend America's distinct development in contrast to the Old World [see *J. Imbelloni, p. 188 ff.*]. Yet this method is now in complete disarray.

In the case of living cultures, we are able to recognize the units and their extent through a kind of immediate perception, even if scientific verification and deeper analysis of such observations are necessary. In the case of displaced or extinct cultural units, we must proceed from the outset in a scientific and systematic—that is, methodical—manner, making use of form comparison and form statistics, or, as cultural-historical methodology puts it, the qualitative and quantitative criteria, as the most essential tools.

Insofar as the history of language deals with the individuation and genealogy of languages, it has been using this procedure for more than a century—and with the greatest success. In all archaeological disciplines, it has led to an unprecedented expansion of the field of study over the past fifty years. Of course, art history, too, works in principle with the same categories —that is, with the nature and number of stylistic features—to distinguish between styles and schools of art.

. There are various reasons why this approach has met with, in some cases, downright fierce resistance in ethnology. One fundamental reason—a lack of willingness to learn—has already been noted above. Linked to this are the arbitrary restrictions and limitations on the research objectives of ethnology that some researchers impose. Another reason is the incorrect or inadequate starting points from which many ethnological methodologists proceed. A third reason lies in the fact that some professional ethnologists—who are either primarily focused on fieldwork or specialized in a particular area—have little interest in the abstract problems of methodology and therefore easily fall prey to misguided theories, unless they prefer to remain entrenched in some outdated school of thought. The most important practical consideration, however, which has led many to reject cultural-historical ethnology in its capacity as the study of cultural units, is the difficulties that arise when applying the cross-cultural comparative method in the field of ethnology. These difficulties did indeed give rise to some concerns in the early stages of its application. Some researchers have therefore gone so far as to declare that, while the epistemological goal of cultural-historical ethnology is certainly meaningful, it is unattainable given the unprecedented complexity of the source material and developmental processes. Added to this is the fact that critics, often in a rather disloyal manner, repeatedly fall back on outdated stages of unit analysis, as if everything had remained the same since Gräbner (1911) [see *W. Schmidt, p. 377 ff.*]. From time to time, people seem to deliberately turn a blind eye to the fact that within the "cultural-historical" school, various schools of thought are striving to perfect the method and eliminate the shortcomings in its application—such as the inadequate consideration of the qualitative criterion, whose functional aspect was not sufficiently appreciated in the past [see *now W. Schmidt, pp. 500 ff.*].

W. E. Mühlmann (in: Preuß 1937) correctly emphasizes this. However, if he considers it necessary to replace the criteria of quality and quantity with the hypostasis of the criteria of form and weight, this must be rejected. For the latter two have a psychological-subjective character and therefore cannot stand in for the purely objective categories of form and number. They are, of course, useful as auxiliary criteria.

A. E. Jensen (1948) goes even further in overemphasizing this criterion. According to him, the holistic worldview—which is inherent to every culture and gives each individual element of culture its true meaning—is, by virtue of its weight, not only an indispensable criterion but, in fact, the sole sufficient criterion for determining affinities among cultural spheres. It does not seem difficult to me to refute these claims on a purely empirical basis by drawing on historical circumstances for methodological clarification. No one would dispute that Catholicism or Islam convey a holistic worldview that is often embraced with fervor. Does this justify speaking of a Catholic or Islamic cultural sphere in our sense, or, for example, separating the Christian or Muslim segments of a people—which have been so for centuries—from those that have remained pagan? Does a Coptic fellah in Egypt not belong to the same cultural sphere as the Muslim one, even though he has been separated from it for more than a millennium by a fundamentally different worldview? The aspects—especially those of a dynamic nature—that arise from such circumstances warn us against drawing overly sweeping methodological conclusions from insights in cultural philosophy that are, in and of themselves, entirely correct.

The reliability of any such research endeavor depends, of course, not only on the quality of the methods employed, but primarily on the quality and abundance of the source material. Where such material is scarce—

and is perhaps even of dubious character, only more or less sound hypotheses can naturally be formulated. The hypothesis is a scientific expedient that is widely used—should ethnological and prehistoric research, of all fields, do without it? Have not the "hypotheses" of Gräbner and W. Schmidt provided greater impetus to the entire field of cultural-historical research—including the philosophy of culture and history—than any other system of thought since the triumph of scientific evolutionism and the collapse of its dominance in the realm of the cultural sciences? And have not countless of their hypotheses since become theories that everyone takes for granted? In my opinion, this success is linked to the fact that the methodology—initiated primarily by Gräbner and further developed by W. Schmidt—comes closest to the comprehensive system of cultural-historical analysis based on fundamental phenomena, as it is attempted to be developed here with all sobriety and brevity, while the remaining approaches work with categories selected more or less arbitrarily and, moreover, lack a clear internal structure. As a result, they repeatedly fall into the error of jumbling together the various aspects and stages of analysis and, moreover, burdening them with theorems which, as we have already emphasized, must not influence the inductive work in any way, but rather must be discussed—as the result of deductive thought processes—only within the framework of synthesis and the philosophy of culture. The question of the functional and intellectual relationships between the individual elements of the cultural whole is, as our systematic consideration of culture reveals, a matter for conceptual-qualitative analysis. However, this analysis is not conducted from the perspective of the problem of the whole, but primarily from that of the intrinsic value of the parts—which is precisely the specifically analytical perspective that enthusiasts of the whole seem to overlook. Accordingly, for the purposes of analysis, functions, structures, contexts of meaning, and value systems are just as much cultural elements as material and immaterial cultural assets. And it is only as such that they play their role in the theory of groups or cultural spheres.

Some ethnologists have attempted to devalue the concept of the cultural element. There is not the slightest reason to do so. In cultural history, it holds exactly the same status as the concept of an organ in anatomy. Of course, cultural elements and bodily organs are subordinate to the whole and derive their ultimate meaning from it. However, this does not prevent one from isolating them—conceptually or physically—from their context, examining them for their distinctive characteristics and intrinsic value, and comparing them with similar objects, such as the human brain and the monkey brain. There are

excellent biological and genetic insights have emerged, without it being necessary at this stage of the work to refer in the least to the wholes to which they belong.

Finally, the indisputable fact that every culture is an organism that derives its true life from the spiritual realm—from a worldview and a system of values—is highly significant, but has nothing to do with the procedure for identifying cultural units. Even to derive general concepts such as cultural groups, culture, and cultural spheres, there is no need to resort to the philosophy of culture; rather, they arise directly from the empirical observation of the distribution and socialization of cultural elements in space. *The proven temporal and spatial coexistence of a large number of cultural elements is, under all circumstances, the obvious expression of an inner historical connection* [cf. *W. Schmidt*, p. 386]. The answers to the questions of what a cultural unit is and what human culture is in the deepest sense come only after the analysis of sources, manifestations, and causes has been completed. Anyone who points out that even the analytical stage of research repeatedly gives rise to reflections of a general nature is entirely correct; yet they should not overlook the fact that this is an essential feature of all scientific work, which, even at its most basic levels, is to a certain degree oriented toward and leads to systematic insight.

The correct application of the criteria for identifying cultural units and their relationships of kinship is therefore not dependent on profound reflections of a cultural-philosophical nature, but can be based on much simpler considerations. With regard to the quality criterion, it is essential to recognize above all the requirement that there be not only external similarity but also functional correspondence. The latter, however, is often difficult to determine. Where it is absent or cannot be established, the possibility of convergence must always be taken into account. But it is not for this reason alone that the quality criterion requires support from corroborating evidence. For even though every genuine formal relationship proves, by the very nature of the matter, a historical connection, a single or small number of such relationships does not, at first, permit the assumption of historical kinship among entire cultural complexes.

Tobacco and corn in Europe, for example, originate from the Americas; however, this set of facts does not imply a cultural kinship, and no matter how complicated the

matters may be, is made clear by the fact that the smoking pipe was also known to Roman legionnaires in Switzerland, even though there does not appear to be a direct connection to the modern tobacco pipe.

A significant number of similarities in form must therefore be demonstrated if a connection is to be proven. The evidential value of large numbers rests on the probability that entire groups of forms that are similar in appearance and function will not spontaneously come together more than once. It therefore also allows for the assumption of a historical connection in cases where such forms occur in separate regions—and that is precisely the classic ethnological scenario. It may then be assumed that a cultural unit was fragmented [e.g. , *W. Schmidt's central proto-culture, and, at a shorter distance, the North American one as well. See W. Schmidt, p. 382*], whether by internal forces (migration) or by external ones (conquest, widespread cultural influences). If the separation lasts for a longer period, the various offshoots of an original cultural unit will inevitably undergo different modifications, partly through internal development and partly through external influences [e.g. , *the southern advanced hunter-gatherer cultures; see K. J. Narr, p. 504*]. One must expect varying degrees of kinship intensity in both parallel and sequential relationships, just as within a language family. Irish and Armenian, for example—primarily through mixing with non-Indo-European substrates—have diverged much further from the common Indo-European language (which was itself already a complex structure) than, say, Lithuanian. What is revealed by the qualitative and quantitative criteria in both linguistic and cultural history is thus, on closer inspection, threefold: (1) the existence of certain units, (2) the somewhat graded, closer kinship relationship between such units, which may coexist or follow one another chronologically or genetically but always trace back to a common principal ancestor, and (3) this very ancestor, whose distinctive character can be reconstructed from the commonalities of its descendants if it is no longer directly discernible. In the field of cultural history, one can speak of such direct evidence when an older primitive culture has been preserved that forms the starting point for a more recent one [*circumpolar hunter culture: pastoral culture, cf. K. J. Narr, p. 521 ff.*], or when such a culture can still be identified archaeologically [*Eastern European-Siberian circle: farming culture, cf. K. J. Narr, p. 522*]. In both cases, of course, the usual criteria must again be used as evidence, unless direct testimony is available, as is the case, for example, in the relationships

Gallo-Roman and French cultures. These circumstances run completely parallel to those in the history of language.

The fundamental clarity regarding what is to be achieved and what is achievable must not, however, obscure the fact that certain obstacles arise in the methodological work that undermine the evidential value of the quantitative criterion. Two of these seem to me to be of particular importance. First, one must account for the possibility of a more coincidental, secondary convergence of a larger number of forms which, although originating from a common source or several closely related sources, have spread beyond their original organic context and thus give the appearance of closer cultural ties than actually exist.

The isolated migration of cultural elements is an indisputable fact; however, in each case, the mono- or polygenetic origin must be examined on the basis of the historical connections that can be established through the form and quantity criteria. Some cultural elements of Central American Indians have spread to Europe quite independently of one another and have converged again here in many countries. One will naturally ask whether such processes are also to be expected under more primitive conditions. I believe this question can be answered in the affirmative. For example, certain South American hunter-gatherer cultures (in the Chaco, in southern Brazil) are heavily enriched with foreign elements (crop cultivation, pipe smoking, pottery, and even rituals play a role here) that do not seem to point to a continuous cultural diffusion. When assessing such phenomena of acculturation, however, one must not overlook the fact that there are fluid transitions between them and more intensive stages of cultural affinity. Mühlmann's weighting criterion can be usefully applied to evaluate them.

A second, even more significant obstacle to the proper application of the quantitative criterion is the availability of sources. Researchers in the field of prehistory rarely have access to truly sufficient source material that meets all requirements in terms of quantity and critical evaluation. Consequently, they are often unable to work with the desirable abundance of formal similarities. This circumstance is, in fact, the primary source of error in all prehistoric research. This makes it all the more necessary, however, to prevent any misconceptions about the actual number of relevant formal correspondences from creeping in. Gräbner's requirement therefore remains entirely valid: the cultural elements used for comparison must not be derivable from one another and must not be in any necessary connection. Furthermore, one must strive for as even a distribution as possible of the compared cultural elements across the various cultural fields.

With paleoarchaeological material, this requirement can be met only to a limited extent, because from a sociological perspective it usually reveals almost nothing, and in the realm of spiritual culture it reveals a great deal only occasionally. Ethnology, however, is often not much better off in practice, since field research fails both qualitatively and quantitatively in vast areas of the world.

An additional criterion capable of compensating for many shortcomings regarding the quantity of forms lies in the demonstration of continuities in the distribution of cultural elements. Archaeology, after all, normally deals with continuously distributed complexes, whereas ethnology and folklore studies do not. This makes it all the more important when these disciplines can identify significant individual forms in the often vast spaces between two cultural units suspected of being related—forms that can be cited as evidence of a culture's former presence in the region in question.

This creates a direct link between archaeology and ethnology, since material cultural elements have occasionally been preserved in the soil that are no longer detectable in the living or historical culture of the intermediate regions in question.

However, the direct archaeological criterion can also be utilized in other ways for ethnological research into cultural spheres. There are numerous cases where historical evidence allows excavated complexes to be identified in their entirety with living or recently vanished cultures. This has been achieved not only in the Ancient World [cf. K. J. Narr, p. 505], but also to a great extent in the Americas, e.g., for the Pueblo culture, the Maya culture, and the Inca culture. Often, the archaeological material contains types that had already disappeared by the later developmental period of the culture in question [see K. J. Narr, p. 506]. Once the tribal connection is fully established, the archaeological material simply becomes an ethnological source.

The direct archaeological criterion should not be confused with archaeological-ethnological cultural comparison, the aim of which is to relate the cultural spheres identified on both sides to one another on the broadest possible basis. Methodologically, this comparison lies entirely within the realm of spatial-quantitative phenomenon analysis; that is, it must employ this interdisciplinary method in the same way as it is practiced in the individual disciplines and as outlined here. It is the only way to arrive at a convincing genealogy of cultural spheres. Where sufficient source material is available, this approach can lead to definitive conclusions.

7.

We must now turn our attention to the *temporal-genetic* aspect of the analysis of phenomena. When confronted with cultural-historical source material that is not dated by historical tradition, chronology must initially content itself with establishing the relative sequence of forms and regularly recurring complexes of forms. Their spatial confinement makes it clear that relative chronology can initially be nothing more than regional chronology. This, in and of itself, need not say anything about the level of development of the cultures in question. Rather, it is entirely possible that in a given region, a less differentiated ancient culture was succeeded by a more developed one. In Europe, this rarely occurred (though it did, for example, during the Migration Period); in non-European countries, such phenomena are common.

Prehistoric chronology has its true foundation in paleoarchaeology. This is because paleoarchaeology possesses the invaluable advantage of an exact chronological criterion: stratigraphy, the sequence of layers in the ground. To the extent that later disturbances might be expected, this source of error is eliminated by the sheer number of findings. The comparative synthesis of local stratigraphic findings leads to archaeological regional chronology, in which various auxiliary methods—especially typological ones—are also employed. Since the distribution boundaries of forms and groups of forms overlap, the regional chronologies can also be correlated with one another. The final result is a relative overall chronology for all archaeologically known regions of the world.

In contrast, ethnology finds itself in a much more difficult situation. It has indeed attempted to develop criteria that would allow it to establish a relative chronology of the cultures and cultural spheres it has identified within a specific region. The main factors considered here include geographical location—for example, in peripheral regions of the world—or the stratigraphic relationship of one culture to another *[see W. Schmidt, p. 380]*. However, this approach yields no more than probabilities. Ethnology lacks an "Archimedean point," such as stratigraphy. Accordingly, it must seek to anchor its relative chronology in paleoarchaeology. This is possible. Where direct connections between archaeologically preserved cultures and living ones can be demonstrated, a secure basis for the most recent developments is provided. Furthermore

regional archaeological cultural stratification must be correlated with existing ethnological groups, as Heine-Geldern and Fürer v. Haimendorf have done, for example, for Southeast Asia and the Indian subcontinent. If this highly promising method has not been applied more widely to date *[see K. J. Narr, p. 505]*, this is due to the generally very poor state of archaeological research in non-European regions. Professional excavations overseas are therefore the most urgent need in the field of prehistory.

The theory of stages naturally also seeks to connect with the history of the Earth, since this can help clarify many temporal and causal relationships. The challenge here is to link archaeological stratigraphy with the geological and biological phenomena of Earth's history *[see, e.g., H. Breuil, p. 273 ff.]*. These studies have led to extremely sophisticated methods, particularly for the Late Quaternary and the postglacial period, which can be applied only by specialists (pollen analysis, peat research, bristle counting, and the like).

Finally, another important chronological problem is the absolute duration of cultural phases and developmental processes. In this area as well, paleoarchaeology is in a better position than ethnology, since it is able to obtain dates from the history of the ancient Orient, plant biology, and meteorology—dates which, although their reliability decreases with increasing altitude, nevertheless allow for certain inferences. The margins of error for the period extending back to 3000 B.C. have become very small. Insofar as ethnology lacks historical data, it is entirely dependent on archaeology in this regard *[e.g., absolute dating of the proto-cultures and the advanced hunter-gatherer culture; cf. K. J. Narr, p. 503 ff.]*.

Relative chronology, geochronology, and absolute chronology all have their own independent value, as they are suited to shedding light on the earliest history of a country, a people, or a culture. The ultimate goal of chronological-genetic analysis, however, is to identify the major epochs in the history of human development. This involves determining the sequence of cultures in relation to the level of their development—what I call "phaseology."

Methods of cultural history that negate the significance of the temporal aspect are doomed to failure if they dare to tackle genetic problems. For chronology is, after all, the indispensable foundation of all history. In connection with

the other branches of phenomenon analysis, it is capable of largely clarifying the development of culture in both temporal and spatial terms—though not yet to the very limit of what we wish to know, namely, the causes of historical events.

8.

The investigation of the reasons for the existence of a culture, a cultural stage, or a cultural achievement—that is, *the analysis of causes*—requires such a broad scope in all directions that the task must fill the researcher with a sense of unease. For both the methodological and substantive problems that arise in the process often exceed the intellectual and physical capabilities not only of the individual but of entire research communities.

It must be clear that every cultural phenomenon has multiple causes, however difficult it may be to demonstrate this in detail. The human spirit is at work in every creation. In everything that comes later, some form of tradition exerts an influence. No cultural form is conceivable without the influence of natural conditions. The analysis of causes must therefore adopt the broadest possible perspective. A one-sided viewpoint will always lead to erroneous conclusions here.

In detail, the relationship between the causative factors and cultural development is subject to a number of aspects, four of which seem particularly important to me. These are the questions of a) internal and external determinism, b) statics and dynamics, c) slowness and speed, and d) the poverty and richness of cultural development.

a) The determination of whether a cultural change stems from an internal process or an external influence depends on the origin of the impulse in question. If a new raw material is discovered and exploited within a culture's sphere of influence, if one of its members makes a new invention, or if the cult system expands ever more magnificently through the power of kings or priests, these are internal developmental processes. If the new raw material arrives via trade routes or otherwise from outside, if an invention is borrowed, or if the expansion of the cult is stimulated by neighbors, these are external influences. These can vary greatly in degree. They need not shake the structure of the receiving culture in the least. They can be fully assimilated by it and further developed in a manner characteristic of that culture.

However, the quantity and weight of the inflowing elements can be so great that a hybrid culture emerges, or that one culture is absorbed by the other—though hardly ever without leaving its mark, as in the case of pre-Greek culture within Greek culture. The identification of formal relationships is a matter for the analysis of phenomena, which thereby advances to the understanding of the extent to which the intensity of these relationships has led to the formation of new cultural units and stages. The actual causes, however, can be clarified in the prehistoric period only if an investigation is conducted on the broadest possible basis to determine which factors were at work in the case in question and how they operated. In many cases, one will be able to formulate only hypotheses—particularly regarding the most intriguing problems.

b) There is still little clarity regarding the extent to which causal factors exert a static or dynamic influence on cultural development. In many cases, a peripheral location within the ecumene is regarded as the cause for the preservation of the oldest cultures. However, this is unlikely to be true. For subarctic regions are by no means inhabited exclusively by ancient peoples, and at the southern edge of the Earth, this is true only to a limited extent. Peripheral and desert locations are probably less a cause than a consequence of an ancient, non-competent culture. What is certain, however, is that mountainous terrain has a conserving effect on culture, while at the same time occasionally giving rise to a dynamic national character (the Kassites, Kurds, Incas)—but perhaps only when population density increases or when charismatic leaders emerge. As is well known, the possession of swift mounts has had distinctly dynamic effects everywhere and at all times. The climate, however, is likely to play the most decisive role in the dynamics of world history. The earlier cultural movements of humanity can probably only be understood in connection with the fluctuations of the Ice Age climate [cf. *H. Breuil, p. 279, A. Rust, p. 296, J. G. D. Clark, p. 318, K. J. Narr, p. 510*]. But even in the post-Quaternary period, climate has, broadly speaking, played a fundamental role in shaping world history. The steady development of Central and Western Europe over the past 5,000 years is just as much a result of climate as the turmoil in Asia. Yet it seems to me that the climate factor tempts some researchers to exaggerate when they immediately attribute every minor fluctuation to major mass migrations and cultural catastrophes. Migrations of agricultural peoples can also be caused by the depletion of the soils they have exploited extensively, especially when combined with overpopulation. Probably every dynamic process

triggered by a whole series of causes, and the same is true of any static persistence.

c) It is also not superfluous to consider the perspective of the slowness or speed of cultural development, even for those who believe in the periodicity of the course of history. For the systems established in this field refer solely to historical cultures or to advanced and fully developed cultures; Spengler's system, moreover, refers only to the course of events within given cultural complexes, but not to that of culture as a whole, which, despite Spengler, is a reality *[cf. F. Kern, p. 12 ff.]*. If the prehistoric chronological frameworks are even somewhat accurate, the earliest stage of human culture *[the Upper and Middle Paleolithic]* lasted many times longer *[see H. Breuil, p. 265]* than the next, and so on. We will first seek the cause in an increase in human talent, but also in the fact that once culture has unfolded, regardless of any particular creative ability on the part of human beings, it continually fertilizes itself on the fertile ground of the mind *[see also I. Schwidetzky, p. 220]*.

d) We must now discuss the relationship between the causal factors and the poverty or richness of cultural development. At issue here is both the differentiation of cultural elements and that of cultural units and cultural stages; for every aspect of a phenomenon can develop in a meager or abundant manner. The natural environment undoubtedly plays a very significant role in the emergence of such conditions, but only in conjunction with other factors; otherwise, it would not be possible for the poorest and richest cultures to coexist side by side in the same region (e.g., India). Where nature offers nothing—as in deserts or the Arctic—culture will always remain rudimentary, or at the very least become secondary in economic terms. The differentiation of cultural groups, and to some extent the formation of cultural stages, depends to a large extent on the location of a cultural region: at certain junctions along migration routes, where new waves of culture repeatedly push through—for example, in Hungary—a much richer spatial and temporal structure of culture naturally unfolds than, say, in Scandinavia, which was only touched by a few ripples of the great global movements. Highly fragmented mountainous terrain naturally has a very favorable effect on the emergence of small cultural units. However, it is likely that talents and personalities are of the greatest significance for this aspect of causal analysis, though unfortunately they are largely inaccessible to prehistoric research.

9.

I believe I should keep my remarks on the non-cultural-historical branches of prehistoric research as brief as possible in these methodological preliminaries. On the one hand, because they do not play anywhere near the same role in the following discussions as cultural history does, and on the other hand, because—insofar as they have been developed at all—they are fundamentally and methodologically much less controversial, even though there are, of course, differences of opinion.

First, a few words on folklore. It is a young science that has only recently outgrown its initial stage of collecting and source criticism and is beginning to become aware of its actual tasks. These tasks lie, on the one hand, in deepening our historical understanding of national folk cultures through the study of folk traditions, and, on the other hand, in the comparative analysis of this material across the entire ancient Western world; for only through such an approach—insofar as folklore studies are concerned—can the prehistoric roots of national cultures be uncovered.

Linguistic archaeology (see Schrader 1883, 1917–29) has a purely cultural-historical research objective, whereas its primary source material is linguistic in nature and must therefore initially be examined using linguistic methods. Etymology—that is, the history of word development—enables it to uncover the common vocabulary and, thereby, the shared cultural heritage of peoples. Since words can gradually change their meaning over time, semasiology—the history of the development of meaning—must be pursued hand in hand with etymology. This requires constant reference to the findings of archaeological and historical research. By ascending from living dialects and languages to the monolingual stage of language development and from there to the proto-language stage, linguistic archaeology is also able to develop a relative chronology; this can be transformed into an absolute chronology through integration with the research findings of paleoarchaeology.

As brilliant as the results of comparative linguistics are in the field of today's living languages and the language families behind them, our knowledge of pre-language-family conditions—that is, the Pre-Neolithic period—remains limited. Despite numerous efforts, it has not yet been possible to reconstruct linguistic stages older than the known major language families. There is also still a lack of convincing evidence from linguistic history

for a relative chronology of living languages or linguistic phenomena, as presented to us in such rich differentiation by the world's languages (cf. the attempt by W. Schmidt, 1926). The problem of the complexity of the languages of extremely primitive peoples also remains unresolved.

Glottogony is a branch of research that has been approached from a wide variety of angles. Biologists, philosophers, psychologists, linguists, prehistorians, serious scholars, amateurs, and wild dreamers have all grappled with the question of the origin of language. Ultimately, this is a metaphysical problem, for language is a primordial phenomenon of human existence comparable to the mastery of fire *[see W. Schmidt, p. 439]*.

From a methodological standpoint, it is naturally desirable that the origin of language be elucidated using empirical material specific to the field itself —that is, by examining later languages. Such attempts have indeed been made frequently and are associated above all with the name Trombettis. They usually aim to prove the common origin of all languages. However, completely convincing results have not yet been achieved, although certain advances cannot be denied.

Historical anthropology, through its direct connection to geological and archaeological stratigraphy, has the advantage of precise chronological criteria. The relationships to cultural spheres provided by archaeological finds are also very helpful to it.

The cultural historian takes a deeper interest in the study of human origins, among other reasons, because it has become uncertain today which of the fossils at our disposal should already be regarded as human and which should not *[see J. Kälin, p. 92 ff.]*.

Paleoethnogeny must begin with written sources that allow for the ethnic identification of the most recent archaeological complexes, in order to then trace back further from these using linguistic (especially onomastic), archaeological-cultural-historical, and anthropological evidence; the methodological difficulties in this field are very great.

Paleopsychology is, for the time being, more of a postulate than a reality.

10.

In conclusion, a word about synthesis. As a creative synthesis of systematically analyzed masses of material, it naturally possesses an artistic

element. It is, moreover, obvious that no one can master on their own the entire body of knowledge that must be synthesized into a comprehensive picture of prehistory. Anyone undertaking such work must rely heavily on others. In doing so, however, they enjoy the advantage of, so to speak, looking down on things from a higher vantage point. Anyone who does this may be mistaken about details, but they cannot fail to grasp the broad outlines, which the traveler on the country road will never recognize. Furthermore, there can be no doubt that the view of the whole sharpens the critical eye. For whoever looks around over a wide range will encounter considerations from various angles that remain hidden from the pure specialist. A prerequisite for this, however, is that whoever undertakes such work is truly an expert in one or more subfields—a researcher who has mastered the craft—and not a fantasist or charlatan who, through effective journalistic compilation of material from handbooks, feigns knowledge that seems to entitle him to take a stand.

However, even in the realm of strictly scientific research, there is a fundamental attitude toward things that, in its ultimate consequences—especially in the cultural sciences—is extremely disastrous. It is not primitively materialistic, and even less fanatically nationalistic; rather, it is, at its core, actually decadent. It applies immense acumen—not to say exquisite sophistry—to problems that often lie at the very edge of what is knowable and worth knowing. It exhausts itself in criticism or specialized analysis and is, so to speak, antisynthetic in principle, averse above all to any universal standpoint, whatever its nature. It seeks to remain noncommittal, for it always has the question on its lips: What is truth? Although these researchers cannot deny that there is a world-historical harmony between racial development, cultural achievements, language migrations, and the movements of peoples, it strikes them as a frightening bogeyman that one would rather not speak of. What attracts them to human beings is not the broad sweep of events, but the momentary, the phenomenal, the minutest details—such as the intricate interplay of cultural mechanisms, a problem that certainly deserves scientific investigation, but one that must be approached methodologically sound and without overemphasis, that is, as just one among the countless phenomena with which cultural history is concerned.

It is entirely possible to arrive at such an atomistic conception of the structure of the world if one focuses exclusively on the dynamics of events—which, after all, never cease entirely—and in doing so overlooks the fact that

there are, time and again, periods in both natural and intellectual development that are static in character, and that within this rhythmic ebb and flow, the static conditions are the longer-lasting ones and those that give rise to traditions and values. All systematization is based on the study of static states, and it is only from these that the transitional periods can be recognized and examined. The rejection of systematics and of comparison—which is the methodological principle of systematics—leads, epistemologically speaking, down a slippery slope that culminates in absolute skepticism and agnosticism. Along this path, science loses more and more of its standing and dignity; ultimately, it is no longer a struggle for knowledge, but a value-free play with dazzling ideas. The end result is chaos and emptiness.

We must avoid this path into the abyss of intellectual decay. We can do so if, with calm reflection, we start from the fact that is internally evident to us: that the cosmos is neither a rigid system nor chaos, but an ordered interplay of forces called motion, life, and the human spirit. These are the three primordial mysteries of the earth. Even those who trace the spirit back to life, and life back to moving matter, cannot rely on empirical evidence, but only on deduction. They hold the firm belief that nature is a self-developed, self-regulating machine that is even self-aware in its finest parts—human beings. In doing so, he adopts a metaphysical position just as does the one who seeks the creative powers not in matter but outside it, in a personal Creator, and thereby places, alongside the threefold order of the fundamental cosmic forces, the conflict-laden polarity of the relationship between Creator and creation—an abysmal interplay of harmony and tension, which shines forth behind all things in the universe.

THE EARLY AND MIDDLE PALEOLITHIC PERIODS
EARLY AND MIDDLE PALEOLITHIC

BY HENRI BREUIL

I. THE AGE OF HUMANITY

[O]ur knowledge of the history and structure of the Earth's crust is primarily the work of the last one and a half centuries. Little by little, we have deciphered the visible pages of its archives, of which only the more recent ones have preserved the remains of fossilized organisms for us. It is only in the final chapter of this book that humanity is fully addressed. Measured against the scale of human history, the figures derived from the study of radioactivity are so immense that this period seems insignificant. The formation of the Precambrian strata, which are even older than the known fossils, must have taken about one billion years; that of the younger strata, by contrast, "only" about 480 million years in total. Of these, the Paleozoic spans 350 million, the Mesozoic 100 million, the Tertiary 30 million, and the Quaternary—during which human presence has been documented—only half a million or a little more. Thus, the latest findings show that the great age to which humanity can lay claim represents only a few minutes of our planet's cosmic existence. But these minutes, measured by the standards of "history" (in the narrow sense of the word), amount to hundreds of millennia—a hundred times more than the "world history" recorded in writing *[see also J. Kälin, p. 58 ff.]*.

Once humans learned to record their thoughts and memories of events through writing, they forgot the tens of thousands of years of their childhood. Humanity's memory is just as simplified as our recollection of the first years of life and is nothing more than a vague outline that resembles a philosophical cosmogony more than actual history.

How, then, did that discovery take place which has so completely transformed our view of the past? We will have to familiarize ourselves, at least in part and very briefly, with its history. As is always the case with such matters, it occurred through multiple avenues.

1. THE DISCOVERY OF ICE AGE MAN

Looking back through the history of the Western world, one encounters peoples about whom little is known. Apart from the names recorded by historians—the Gauls, Ligurians, Celts, Iberians, etc.—we know that they possessed weapons and tools made of iron. Homer, however, speaks of bronze weapons—not iron ones—for the time of the Trojan War. It was only through a purely speculative intellectual anticipation that Lucretius arrived at the idea of an age in which stones and wood provided humans with weapons in place of claws and teeth. Then, beginning in the early 19th century, Danish discoveries provided empirical confirmation that the Iron Age in this country was preceded by the Bronze Age, which in turn was preceded by the Stone Age.

But all cultures that were already more or less well known at that time belong to the most recent geological epoch—in which we, too, still find ourselves—and depict humans as herders and farmers amidst a flora and fauna similar to that of today. The question remains whether humans had also encountered the extinct fauna of large pachyderms and predators, which, since Cuvier's paleontological work, have no longer been regarded as the remains of giants.

As early as 1700, Conyers recognized in the gravel of the Thames the association between a flaked flint "axe" and the bones of an elephant. It was still too early for a proper historical interpretation of such a finding. Conyers believed that an ancient Briton, armed with a stone axe, had fought an elephant from Caesar's army here. He noted, however, quite reasonably, that the course of the Thames had changed several times since that event. His note, published in the journal of the "Antiquaries of London," received no response whatsoever.

Almost a century later (1797), John Frere noticed in Hoxne, not far from Ipswich (Suffolk), piles of stones that had been heaped up along the path to a nearby clay pit. There, bones of large pachyderms and freshwater mussels—which he mistook for marine ones—had also been gathered together. Among the stones, he found several "axes" that had been chipped and sharpened by striking, and—unlike Conyers—he grasped the full significance of his discovery: the coexistence of humans with extinct animals. However, his report, also published in the "Antiquaries of London," failed to attract the attention of the scholarly community of his time.

The breakthrough leading to this realization was reserved for Boucher de Perthes de Crèvecœur, a learned man who, though not a natural scientist himself, was surrounded by accomplished naturalists in the "Société Polymathique" of Abbeville. In a truly scientific manner, he demonstrated the connection between the artifacts of "antediluvian" humans—namely, simple chipped stone tools—and the remains of elephants, rhinoceroses, and hippopotamuses. At that time, the concept of the biblical Flood was still widely accepted, and people readily attributed all kinds of deposits to it—both the cave fillings and the gravel banks that had been left behind at various elevations on the valley slopes and whose deposition dated back many tens of thousands of years. It was also the Flood that was blamed for the deaths of the elephants, rhinoceroses, and hippopotamuses, whose bones were frequently found in the pits at Menchecourt and Moulin-Quignon, just outside the gates of Abbeville. Since, according to the Bible, humans had lived even before the great catastrophe, their remains and those of their artifacts were expected to be found mixed with the bones of the large animals in the layers deposited by the Flood.

Boucher de Perthes, who was interested in this problem, sought **to prove** this conclusion and set about collecting whatever the workers unearthed in the pits. On this false theoretical basis, a new science emerged, which

"human paleontology"—the study of Ice Age humans. Boucher de Perthes devoted all his energy and considerable abilities to this field beginning in 1837. Undoubtedly, he was often the victim of the workers, who would place flint tools—picked up on the surface of the gravel pits or even made by themselves—into the excavations, or even a human lower jawbone that had been taken from some ossuary and was now "discovered in situ" by Boucher de Perthes. But there was no shortage of genuine, chipped "axes" either, and these, mixed in with the forged objects, served as the basis for the conclusions drawn by the scholar from Abbeville. His own imagination posed another obstacle: the stone artifacts were not enough for him. He needed ritual objects and works of art to be able to grasp the spiritual realm of human knowledge as well, and believed he had found them in strangely shaped—but by no means artificially formed, rather natural—flint nodules, such as are frequently found in these gravel deposits. But the actual facts were clear: worked stones were found in the same deposits as the bones of extinct animals, and their discoverer's steadfastness ultimately overcame the opposition of his critics.

From that point on, the discovery of fossilized humans contemporary with the large extinct mammals became one of the achievements of human intellect. The next task facing him was the classification of the available material. As early as 1852, following a fortuitous discovery, the paleontologist Lartet was summoned to Aurignac (Haut-Garonne), not far from the Gers. It was a small cave sealed by a stone slab, filled with human skeletons that had been buried with reverence. Beneath this Neolithic cemetery lay layers crammed with worked bones and ivory, chipped flint, and bones of reindeer, cave bears, hyenas, rhinoceroses, and so on. Lartet examined this layer but believed it contained the remains of ritual meals held at the time of the burials. Very soon, however, it became clear that these remains were much older than the burials and bore no relation to them. Lartet then set out to investigate other caves in the Pyrenees. The Massat cave yielded, in its hearth layers rich in reindeer bones and stone tools, toothed harpoons made from cervid antlers, bone needles, and a stag antler segment bearing a beautifully carved bear's head at its tip. A few years later, he received a box from a fossil collector containing bone fragments and flint stones that came from a cave in Les Eyzies (Dordogne), and the collector told him that the entire Périgord region was full of similar traces.

Edouard Lartet wrote about this to his English friend Henry Christy, who, without hesitation, financed an expedition to the Vézère Valley, which remains famous to this day. That was in 1863. This excavation campaign not only led to the discovery of countless artifacts but also enabled E. Lartet to draft an initial classification of artifacts from the earlier prehistoric periods, which formed the basis for all subsequent classifications and remained dominant until 1880. Its weakness lay in the paleontological basis of the periodization, which precluded its application to areas further south where the index fossils used by Lartet (the ancient elephant, mammoth, cave bear, and reindeer) were absent.

Around this time, Gabriel de Mortillet became assistant curator at the Museum of Antiquities in Saint-Germain-en-Laye; he had been a prehistorian since his youth and still possessed the vigor of that age. He had the idea of replacing Lartet's paleontological stage designations with archaeological names based on the chronological sequence of industrial types. Incidentally, his system initially simply followed Lartet's, but the names were derived from characteristic find sites. Over the next twenty years, a few minor changes were made to this classification, which gained general acceptance. Distinctions were already being made between the Chelles, Saint-Acheul, Le Moustier, Solutré, and La Madeleine periods. This sequence was recommended

its clarity, simplicity, and logic—which, incidentally, was far too pronounced to provide an accurate picture of reality, which is always much more complicated than the conception one forms of it. As early as 1906, it became necessary to insert the Aurignacian between the Mousterian and the Solutrean.

2. THE QUESTION OF TERTIARY MAN

Soon, however, the question arose as to where, geologically speaking, one should stop when moving backward in time. In terms of living conditions, humans could certainly have coexisted with pre-Quaternary mammals—for example, from the middle of the Tertiary onward alongside mastodons and dinotheres, and from the end of that period onward with the first southern elephants. In the absence of skeletal remains—which, incidentally, are also very rare in the Quaternary—but where the presence of humans is further attested by indisputable tools, it has been believed on several occasions that stone tools worked or chipped by humans during the Tertiary period had been discovered, the so-called "eoliths." These are simple, natural pebbles that were supposedly modified for use or more or less sharpened. When we look back today at all those attempts to find an "eolithic" stage of human industry, nothing remains of them. Here, a "posthumous" list of the most important finds of "eoliths," along with an explanation of the actual, natural causes for the shaping of these stones, must suffice:

Miocene of Thenay (Loir-et-Cher): Natural thermal causes (fire) that affected almost all of the flint (intense cracking and frequent red discoloration).
Oligocene of Boncelles (Belgium): Pressure on the flint "in situ" led to splitting and "retouching." Some of it is found "altered" in Oligocene marine deposits.
Miocene of Puy-Boudieu and Puy-Courny (Cantal): Transport via slope slides of earth masses and the resulting compression of the silex involved.
The Reutélian and part of the Mesvinian in Belgium, and the Eoliths of Kent: Cleavage and retouching in alluvial deposits.
Flénusian and part of the Reutélian in Belgium: Rust-covered flint damaged by wagon wheels (in part genuine but recent tools that were subjected to similar impacts).
Pliocene of St. Prest (Eure-et-Loir) and Bethlehem (Judea): Compression and solifluction resulting from the dissolution of the subsoil.
Red Crag, etc., in Ipswich and the surrounding area (England): pressure from glaciers (scratches) on older soil. However, traces of fire and a number of rock fragments remain possible as results of human activity, even though the cleavage angles of the artifacts generally argue against this.

Other researchers relied primarily on broken and scratched bones. Here, too, a few examples will suffice:

Miocene of Billy (Allier): Rhinoceros bone compressed by pebbles in the soil.
Pouancé (Maine-et-Loire): Halitherium ribs gnawed by a Miocene giant shark (Carcharodon).
St. Prest (Eure-et-Loir): Bones gnawed by a beaver (Trogontherium) or scraped by stones trapped in shifting soil.

I do not wish to list here all the discoveries that can be refuted through in-depth study of natural causes. Even if they clear the field of research of these failed attempts to prove the presence of humans, the question remains open as to whether humans did not already exist at the end of the Tertiary Period. In any case, recent finds in Africa bring us at least close to the boundary between the Tertiary and Quaternary periods *[see J. Kälin, p. 97 ff.]*.

3. THE ENVIRONMENT OF ICE AGE HUMANS

The dating of Ice Age humans and their cultural legacy is accomplished through classification into geological stages, whose formations can be attributed to very specific circumstances, which we must also briefly address here. On repeated occasions throughout geological history—not only during the Quaternary but also during the Paleozoic, and in various periods of the Mesozoic and Tertiary—the Earth has witnessed the development of vast ice masses in regions that are now glacier-free, spreading across vast areas.

Normally, this initially requires a period of heavy atmospheric precipitation in the form of snow in mountainous regions and areas near the poles, where accumulated masses of snow are transformed—first into firn and later into ice—due to pressure and folding. This ice moved down through the valleys and spread to the neighboring plains and even farther afield, as long as new snowfall behind the glacier fed the ice flow. These substantial precipitation events presuppose an increase in the evaporation of seawater, which in turn requires not a reduction but an increase in solar heat. This is the first cycle—the period of glacial growth and expansion—corresponding to heavy downpours in the tropics. After a period of intense vapor formation had significantly lowered the Earth's average maximum temperature, a dry and cold period followed amid reduced solar radiation, during which sea levels dropped considerably as a result of the evaporation of water masses that had frozen into ice and were no longer flowing back into the ocean. This period gradually led to the retreat of the glaciers through slow melting and erosion. The tropical regions began to suffer from drought and took on a desert-like character. The areas further north were dominated by dry, cold conditions. There, the wind carried considerable deposits from the bare clay surfaces abandoned by the ice and from the beach sands exposed by the ocean

—loess and dunes. Afterward, climatic conditions improved. Sea levels rose again. In the temperate zones, rain began to fall once more, altering the sediments that had previously formed. This is the interglacial period, which is humid in the temperate zones and dry in the tropics.

From 1901 to 1909, two prominent German glacial researchers conducted an in-depth study of the Alpine glacial deposits, namely the widespread fluvio-glacial sheets and the interglacial formations intercalated between them. They published a system of four major Quaternary ice ages: Günz, Mindel, Riß, and Würm, and dated the appearance of humans to no later than the Mindel-Riß Interglacial—and not, as previously believed, the Riß-Würm Interglacial. All subsequent work builds upon this remarkable study.

In countries with flat terrain, such as England, northern Germany, and the Russian plains, the glaciers spread over vast areas, extending from Scandinavia to Saxony, Poland, and almost as far as the Crimea. In the west, Ireland and the Netherlands were completely covered, and three-quarters of England was covered. At the time of their greatest extent, all of Switzerland was also buried under ice, and the Rhône Glacier reached Lyon and the Saône. There were glaciers in the Pyrenees and, to a modest extent, also on the central plateau of the Sierra Nevada and even the Serra da Estrela.

These drastic climatic and geographical changes naturally had a profound impact on the entire living world, including humans. In the Quaternary fauna, we can observe corresponding changes in the composition of the animal and plant life in areas affected by the climatic shifts described above. Our knowledge of the latter is still quite incomplete; however, we know that during the glacial periods, steppes and tundras with only sparse tree cover predominated in Europe, whereas during the interglacial periods, extensive forests are presumed to have existed, along with plants that require a warmer climate, such as the buckthorn and the Pontic alpine rose.

During the warm period at the beginning of the Quaternary, heat-loving animals were present: in China (Nihowan), the saber-toothed tiger and the Calicotherium; in Morocco (Sicilian Stage), hippopotamuses and rhinoceroses. During the first interglacial period, we find macaques, saber-toothed tigers, striped hyenas, porcupines, southern elephants, Trogontherium elephants, and Etruscan rhinoceroses along the Somme and Saône rivers; and during the subsequent warm periods, Trogontherium elephants, porcupines, roe deer, brown bears, leopards, large wild boars, spotted hyenas, a small wolf, hippopotamuses, Merck's rhinoceros, ancient elephants, and the freshwater snail Corbicula. In China, tigers, red deer, and spotted hyenas lived during the last interglacial period. During transitional periods, we find, for example, horses, cattle, and deer in southern France. The glacial periods, on the other hand, are characterized by the woolly Ice Age elephant (mammoth), the woolly rhinoceros, reindeer, and musk oxen. All of these animals were of the utmost importance to humans as sources of food, and their retreat in response to certain climatic conditions therefore had far-reaching consequences for humans as well.

4. THE ABSOLUTE AGE OF THE ICE AGES AND HUMANITY

Thanks to two scientific methods—counting the meltwater terraces since the last glacial retreat (warren counting) and determining the proportion of pollen from specific plants in the individual layers of bogs and similar deposits (pollen analysis)—it is possible to date the most recent period of the Quaternary with the utmost precision: From 9,000 to 8,000 years ago, pollen records indicate birch and pine vegetation in Scandinavia; from 8,000 to 4,000 years ago, hazel and alder dominate the landscape, followed by oak. Beech does not appear until much later. But these are time periods that already come close to the scope and scale of history (in the narrower sense of the word), and they encompass only a tiny fraction of the actual span of human history.

For some time now, other attempts have been made—based on astronomical principles—to explain and measure the ice ages and their periodicity. Some sought a solution based on the precession of the equinoxes and the variations in the Earth's orbit, which manifest themselves in a cycle of about 2,600 years. Starting from this obviously too narrow basis, one arrives at very high figures (approx. 130,000 years) for the Quaternary and thus for human history. But this is insufficient to account for the extraordinary phenomena of very varying duration and significance that took place on Earth during this epoch.

More satisfactory is the hypothesis of Milankovitch, who, using a mathematical method too complicated to be described in detail here, arrived at a curve of the radiant energy received by the Earth from the Sun for each latitude over the last 600,000 years. In doing so, he took into account the facts just mentioned—namely, the changes in the Earth's elliptical orbit around the Sun, the orientation of its axis of rotation, fluctuations in the reflection of the Sun's rays, etc. The curve for the 49th parallel corresponds sufficiently well, for Europe, with the geological evidence for the various Quaternary snow lines. Accordingly, the beginning of the last glaciation (Würm) dates back 120,000 years; the last interglacial period lasted from 190,000 to 120,000 years ago, and the third ice age (Riss) from 240,000 to 190,000 years ago. The Great Interglacial (Mindel-Riss) spanned from 440,000 to 240,000 years ago. It was preceded by the second ice age (Mindel), which lasted from 480,000 to 440,000 years ago. Finally, the preceding warm period (Günz-Mindel) dates from 550,000 to 480,000. But since the

humans were already present throughout the Old World at that time, it is likely that they had already lived through the first Quaternary ice age (Günz), which lasted from 600,000 to 550,000 years ago, and recent findings from Africa indicate that their first appearance predated even that.

II. WEAPONS, TOOLS, AND INDUSTRIES

Prehistoric humans worked stone to meet the same needs that we address today through the use of iron and other metals. Undoubtedly, he initially did so using stones that were naturally sharp-edged or pointed. Later, he began to deliberately shape them by striking them. He had to work wood and bone with these stones, just as we do with the axe, the file, the chisel, the saw, the drill, etc. He was forced to extract everything of use from the bodies of animals by using cutting and scraping tools to remove the fur, the fat, and the attached hides, to soften the fur, and to cut it into straps and garments. For hunting, he needed weapons in which wood was more important than stone, serving as a handle or shaft. Of these weapons, on the one hand, the spearheads had to pierce the skin of animals or enemies and penetrate deep into their bodies; on the other hand, the clubs or axes had to shatter the skull or limbs of game or an opponent.

We can only speculate, through indirect inferences, whether and how a particular object made of stone, bone, or antler was mounted. To attach such wooden shafts to the stone that reinforced them, binding materials were necessary, such as fur straps, frayed tendons, or plant fibers—not to mention resin, which was intended to secure the entire assembly. All of this required the intricate manufacture of tools—some cutting, others serrated. Added to this were grinding and rubbing stones, which were unworked but whose use as such left their mark on suitable pebbles. They were used to grind grains and tubers, to grind ochre for body painting, or to pound bark and twigs, as well as for various other purposes. Finally, digging tools were also needed—whether to extract tubers from the ground, to dig holes for building huts or pits for trap hunting, or, ultimately, to extract flint of better quality than that found on the surface. Let us consider these

various requirements, we arrive at the following list of tools and weapons:

Tools for

working wood and bone (axe, chisel, saw, file, plane, drill, etc.); butchering and skinning animals, preparing and cutting up hides, and splitting bark and stems;

Tearing up the ground to extract raw materials and tubers or to dig pits;

Crushing stone, breaking large clam and snail shells, nuts, bones, **marrow**, grains, dyes, etc.

Weapons that rely on

weight (clubs, hand axes, throwing stones, slings);

a cutting edge (axes);

Point (daggers, lances, and spears; bows and arrows were not yet known).

1. ARTIFACT SHAPES AND TYPES

Scientists have created a vocabulary to describe the various stone artifacts, which we must use for lack of a better means of communication. We will also make use of this vocabulary in the following and will therefore briefly explain it.

a) Unworked tools made of raw stone: pebbles of hard rock that could be used as projectiles, clubs, or grinding stones; large slabs that could serve as millstones, paint palettes, or makeup palettes; and pyramid-shaped blocks used as anvils.

Such boulders made of hard rock—quartz, quartzite, basalt, granite, etc.—round in shape or of more elongated dimensions, allowing for a firm grip, are found by the hundreds at sites dating from all periods of the Stone Age and even later. They may have served as projectiles. Others were used as pestles or grinding stones and show scratches or localized signs of use resulting from impact and friction against another, larger, and flatter stone—the grinding stone.

b) Tools crafted from core pieces or large flakes: The block from which the flakes were detached is called a core stone. Reuse of this core stone as a projectile, small axe, mallet, etc., has frequently been documented. Other tools were directly and intentionally shaped from core stones by detaching flakes and prepared for a specific purpose, and were worked on either only one side or both sides (“single-sided” and “double-sided”). Shape and size vary greatly (from 4–5 cm to 25–30 cm), as does the method of production, i.e., both the flaking technique and

retouching, as well as the fine, specialized retouches. They usually have a rounded base for a direct grip. Sometimes this base is offset to the side; at other times, the side edge is sharp, suggesting that the tool was intended for light work—if held in the hand—or for mounting on a handle as a point or at a right angle to the shaft. These tools, referred to by the traditional—though mostly inaccurate yet convenient—term "hand axes," were used during various archaeological periods. They date from the beginning of the Quaternary through the last Ice Age—that is, over more than three-quarters of human history.
c) Tools made from flakes: The initial striking of a core to level its surfaces already produced many flakes suitable for use, a certain number of which were utilized at the striking sites. They are usually recognizable by their irregular shape and the fact that their reverse side often retains the natural rock crust. In very ancient times (e.g., the Clactonian and Abbevillian periods), almost all flakes are of this type. But although they remain very numerous, well-formed flakes are found later on that have been detached from core stones that were prepared in advance for their production. Here we distinguish between flakes in the narrower sense—whose width is at least half their length—and blades, in which the width is much smaller.

Such flakes and blades can be used without any further processing or retouching; however, they are then—apart from their flaking technique—characteristic neither of a specific period nor of a particular industry. In contrast, those that have been retouched for a specific purpose represent types that may be indicative of a particular level of development and may have enjoyed varying degrees of popularity. Simple flakes are found in every industry, even alongside the more typical objects mentioned above, but their **techniques vary** depending on the period.

Specimens retouched into specialized tools often feature a regularly shaped base that has been reduced in size as if to fit into a handle. In some cases, the striking boss and part of the base were removed for this purpose. In other cases, the base is retouched like the rest of the piece's edges and carefully refined into a point or similar shape if it is narrow, or into a scraper if it has a broader form. The end may be rounded into a scraper or shortened by a transverse "cut" and retouched vertically. It is often shaped into a sharp or blunter point with curved, straight, or concave side edges. This point can be used for drilling or

scraping. Rarely does the end feature a sharp transverse cutting edge left as a chisel. If this runs perpendicular to the surface of the object, it is referred to as a burin. The side edges were sometimes left sharp on both sides, sometimes only on one, while the other was retouched or even blunted to create a generally convex back. At other times, both were fashioned into concave, convex, straight, curved, or angular scrapers. There are also examples with more or less fine and regular indentations.
d) Bone tools and weapons: These are generally rare in the Early and Middle Paleolithic, but in the high-altitude sites of Switzerland, many struck and used bones have been found, most of which are pointed or shaped with scraping edges and show clear signs of wear or use polish on parts of their surface.

Half-lower jaws of cave bears, armed with their canines and with their ascending branches chipped off or reduced in size, have long been known from the Pyrenees. The parts suitable for gripping exhibited a polish similar to that left by the hand on the handles of heavily used tools. I have made the same observation on the jaws of the massive wild boar from Choukoutien (China), with its enormous tusks, which could even be used on their own. The central section of the jaw of felids and boars (including the canines in the former, and only the incisors in the latter) was severed at the same site on several occasions by deliberate striking, whether as a tool or as a trophy. The same is true of the corresponding portion of the upper jaw of large felids with preserved canines and incisors. The lower jaws of deer show traces of a different, specific use, at least those of Pseudoaxis pachyosteus, which are very durable. They were used by grasping them at the snout region, whereby the ascending jaw branch, which served as a working tip, often shows slight wear. The upper and lower jaws of the powerful Choukoutien predators, reinforced with molars, appear to have been prepared by retouching. The tips of the teeth were ground down, as occurs through friction when used as files. The study of prehistoric Eskimo tools attests to similar phenomena.

2. THE QUESTION OF PRELITHIC OR ALITHIC INDUSTRIES

We are accustomed to referring to the earliest periods of human history as the “Stone Age.” Indeed, it is primarily worked stone tools that have been preserved from this era. But it would be a grave mistake to believe that they were the only tools in use. Wood certainly played a major role as well, but it has generally not survived to the present day. Ethnography confirms that there may have been peoples who used almost exclusively wood. The Semang of Malaya, in fact, have only one

wood industry, primarily based on bamboo, which leaves nothing behind for fossilization *[cf. W. Schmidt, p. 380]*. Aside from termites and other wood-eating insects in tropical regions that consume it, wood rots in damp conditions and disintegrates, except in a few very rare cases. One such case is charring in fire; the other is preservation in boggy or saline environments. For the first case, I mention only the conical tip of a wooden spear, which the Marquis of Cerralbo found in a charred state at the Torralba site (Soria) along with numerous ancient elephant bones and Acheulean hand axes. As for the second case, I cite the large cylindrical spearhead that Hazzeldine-Warren found in a bog at Clacton-on-Sea (England), which was associated with numerous Clactonian flint flakes. Recently added to this is the beautiful wooden spear (found between the ribs of an ancient elephant?) with a fire-hardened tip from Lehringen (Hanover).

Stone suitable for toolmaking is completely absent in large areas of the Earth. Skeletons of animals that died of natural causes or were killed while hunting, on the other hand, are found everywhere. Certain bones, even when completely unworked, naturally form a club or a good lever [cf. *J. Kälin, p. 98*]. In vast subpolar regions, there is little or no stone, and aside from driftwood, there is no wood either—only the bones of seals, whales, and the few Arctic mammals such as reindeer, musk oxen, and polar bears.

Moreover, it was undoubtedly one of the first human ideas to borrow the horns, antlers, teeth, and claws of animals that were naturally better armed and to turn them against the animals themselves. This idea is much simpler than that of using a stone or crafting a tool or weapon from it using a complicated technique. Logically, therefore, bone—meaning all skeletal parts, including horns and antlers—must have formed part of primitive industry from the very beginning. Whether this theoretically deduced proto-ergology actually existed is a question that still needs to be empirically verified.

3. OLD AND MIDDLE PALEOLITHIC INDUSTRIES

The very ancient industry at Choukoutien near Beijing (*Choukouténien*), which consists primarily of worked bones and cut-off deer antler shafts (see above), can be cited above all as evidence for the view expressed above. It encompasses

but also a large quantity of small quartz tools worked using the bipolar technique, which are often quite well retouched into scrapers, drills, beak points, points, notched blades, even blades, and, in isolated cases, narrow lamellae made from the rare flint. Furthermore, there is an abundant number of flaked pebbles and more or less Clactonian-style flakes that have been retouched subsequently.

The following stone tool industries in the southern Old World, which consist primarily of chopping tools made from flints, large, coarse scrapers (choppers), and proto-handaxes, and which Movius grouped under the name "Chopper-chopping tool complex," show affinities with the Choukoutien stone tool industry: *Fingnoian* (Siam), *Anyathian* (Burma), *Tampanian* (Malaya), *Patjitanian* (Java), *Pre-Stellenbosch* (South Africa), *Olduvayan*, and *Kafuan* (East Africa).

Within the broad category of handaxe industries, which consist primarily of bifacially worked core tools (handaxes), the following complexes can be distinguished:

Abbevillian: Initially produced using the anvil technique, later also coarsely struck with a stone hammer to produce bifaces and small, irregularly retouched flakes: Western Europe, Africa, India, Java.

Acheulean: Bilateral tools struck with wooden hammers and flakes—which occur more frequently than in the Abbevillian, are unprepared, and are often produced using the anvil technique: Western and Central Europe, Africa, India.

Micoquian: Miniature hand axes of very refined workmanship, mostly lanceolate in shape, along with points, scrapers, drills, etc.: Palestine-Syria, Western and Central Europe, Africa, India.

Sometimes, especially along the Iberian Atlantic coast, handaxe industries are found in *the* so-called *Lusitanian facies*, i.e., they consist of pebbles roughly chipped into a point (a phenomenon that also occurs in the Mesolithic period as the so-called Asturian culture).

A distinct category of stone tool industries must be clearly distinguished from the handaxe industries; this category originally consisted solely of flaked tools and no handaxes. It comprises the following complexes:

Clactonian: Often quite large, but generally medium-sized and small flakes produced using the anvil technique. Their characteristic feature is the smooth strike base, which forms an obtuse angle with the striking surface. The retouching of these flakes is initially coarse but becomes finer later on, which seems to indicate the use of a wooden hammer: Africa, India, Western Europe, Central Europe.

Levalloisian: A flake production industry that likely developed from the Clactonian (including via the Belgian Mesvinian), in which core pieces were prepared in advance to produce regular and large flakes and were struck into shield-shaped, discoidal, or rectangular forms. The area of the core struck by the detaching blow is particularly finely and carefully retouched. This retouching, preserved on the strike base of the flakes, is the hallmark of the Levalloisian: Africa, Europe, Northern India.

Tayacian: Smaller flakes than in the Clactonian, but produced using the same technique and only rarely with a prepared base: Palestine-Syria, North Africa, Western Europe.

Languedocian: Flakes and worked pebbles, mostly made from coarse material: Southern France, the Pyrenees, Portugal.

Mousterian: Smaller but better retouched flakes than in the Levalloisian, often retouched into points (mostly of triangular basic shape) and scrapers (mostly with a curved scraping edge). Where large flint blocks were available, the flaking technique corresponds to that of the Tayacian. When the tools are made from smaller, prepared nodules, the retouched base of the Levalloisian typically appears

. In fact, the Mousterian soon takes on the form of a developed and perfected Tayacian style, with only a few flakes featuring a prepared base, but with beautiful tools retouched into scrapers and points (e.g., La Quina, Charente); in other cases (e.g., Le Moustier, Dordogne), all high-quality flakes are derived from core pieces with carefully prepared bases. Furthermore, the Mediterranean sites (e.g., on the Riviera, in Italy, North Africa, and Palestine) show a predominance of points, even triangular flakes and blades, over the broad flakes and scrapers typical of the classic region of southwestern France—a phenomenon that can only be explained by a direct descent of the Mousterian in these areas from the Levalloisian.

Throughout North Africa, the development of this Levallois-type Mousterian follows its own course in the formation of the *Aterian*, which, in its flaking technique, corresponds entirely to the Levallois-Mousterian but features numerous stemmed points. Other new types are also found here: concave and complex Y-shaped scrapers (Sahara), and double-sided retouched blade points (Egypt and the southern Sahara; much rarer in Morocco, the northern Sahara, and North Africa). In these regions, the Aterian represents the final phase of the Mousterian industry, but its technical influence continued on a broad scale throughout the Upper Paleolithic and, even later, in Egypt, East Africa, and South Africa, where it can be observed developing extensively alongside more recent techniques [*cf. A. Rust, p. 293 ff.*].

Special mention should also be made of the development of a *Micro-Mousterian* characterized by very small tools (Cantabria, the Pyrenees, Italy, Syria). The situation is similar with the Mousterian-Aurignacian-like industry in East Asia (Ssjara-osso-gol). The industry of the Ordos Steppe also exhibits Mousterian-like features, though it is more crudely executed. Comparable to this is the stone tool industry of the cave bear hunters of the *Alpine Pre-Mousterian*, which was produced from inferior raw materials. Numerous bone fragments are also found there, a number of which were certainly used, and certain parts of which have been smoothed by use. Of particular note are points, scrapers, and the so-called “buttons.” In many cases, these stone tool industries occur intermingled, and this coexistence is characteristic of certain complexes. Mixtures of chopper-chopping tools and hand axes occur in India and Java, while hand-axe industries coexist with Clactonian tools particularly in Africa (especially Morocco). In later periods, such phenomena become increasingly common. Certain levels of the Mousterian show a great abundance of heart-shaped or heart-shaped-lanceolate hand axes of the Acheulean tradition, found not only alongside scrapers and points, but also alongside scrapers, drills, and notched blades, which are absent or at least rare at other sites lacking hand axes. In Cantabria and the Basses-Pyrénées, a complex of small tools (scrapers, points, drills, and sometimes burins) in the middle stratum is interspersed with numerous Acheulean-tradition hand axes made from flakes (made of quartzite, ophit, or even limestone), many of which are reminiscent of those from the Sahara and Central Africa. A similar pattern is found in northern France and England, where the development of the Levalloisian V—initially rich in hand axes—gives rise to a Mousterian-Levalloisian phase featuring points, triangular flakes, and blades. Even alongside the advanced hand-axe phase in the caves, numerous broad blades with blunted backs can be observed, retouched into asymmetrical points. They become more numerous at *Abri Audi* and in the Mousterian of Abri Lartet, where they appear alongside more blades, many of which resemble Aurignacian forms and are sometimes partially retouched into primitive burins, notched blades, etc. This must undoubtedly be seen as a significant influence of new arrivals [cf. *A. Rust*, p. 292]. At the same time, a rapid decline in the use of hand axes begins before their final disappearance.

III. CHRONOLOGICAL AND HISTORICAL POSITION OF THE INDUSTRIES

In the previous chapter, reference was already made on several occasions to the chronological position and development of certain industrial phenomena. These statements are based on the superimposition of the strata containing the artifacts in question, in accordance with the geological principle that the higher layers in a given stratigraphic sequence are younger than the deeper ones. A prerequisite, however, is that this superimposition is not the result of a later displacement that has disrupted or even reversed the order of the phenomena. This method, stratigraphy *[see O. Menghin, p. 250]*, draws on geological, geophysical, and paleontological techniques to link locally obtained results across greater distances. It must be borne in mind, however, that—especially in the case of strata that were not deposited undisturbed in the same location—older, displaced fragments may also occur in younger strata. Their physical condition, however, usually makes it possible to identify this without a doubt. It goes without saying that only the youngest objects contained within them allow for the dating of a stratum, and even then only if they have not themselves been introduced into it at a later stage.

1. STRATIGRAPHY OF CAVES AND ROCK SHELTERS

The simplest and, for local chronology, most important case of stratigraphy is certainly that of a rock shelter or a cave. In our regions, however, the oldest traces of human activity are consistently found not in caves but at open-air sites. Only a few caves contain finds that take us back to before the last interglacial period; for example, the Observatory Cave in Monaco, where the Abbevillian people left their tools considerably above the 60- or 90-meter-high Mediterranean beach, and where the Clactonian and Acheulean cultures lived prior to the only temporary return of humans who hunted the cold-loving wildlife of the last Ice Age here. As examples of rock shelters with very ancient fill—whose existence remained hidden for a long time by thick masses of debris forming a veritable slope—we mention Choukoutien in China and several more recent cave sites.

Choukoutien: This consists of a series of rock shelters situated one above the other in a rocky gorge that cuts into the edge of the Mongolian Plateau, about 60 km from Beijing. The deposits, consisting of alternating layers of habitation strata and ceiling collapse debris, reach a thickness of 50 m. The fauna is quite uniform from top to bottom, as are the stone tools and the human species (Sinanthropus).

The fauna differs significantly from that of the Great Chinese Loess (Riß-Würm), which includes tigers, red deer, and spotted hyenas. Here, the fauna at the base still includes Machairodus and Calicotherium, animals characteristic of the Early Pleistocene

Nihowan Stage, during which Pithecanthropus pekinensis likely already lived, and for several caves at Choukoutien, where a few chipped stones, charred bones, and severed antlers have been found. The deer from these various localities are not the same, indicating considerable differences in age.

The age of Choukoutien is certainly older than that of the Mousteroid culture at the base of the great loess deposit and the Moustero-Aurignacian from the same formation.

Sites of the Cave Mousterian: Above the Tayacian, following isolated intercalations of Micoquian layers, lies the large Mousterian complex. All along the Mediterranean coast, at an elevation of 10 meters, the caves eroded by the Grimaldian Sea—which contained warm-water mollusks, including the Indian Strombus bubonius—were inhabited by Mousterian tribes after the sea level retreated by 100 meters or more (the Grimaldi Caves near Menton, the Circeo Caves, the Romanelli Cave, the caves of Furninha near Peniche, Devils Tower Cave in Gibraltar, and coastal caves in Algeria, Tripolitania, Palestine, and Syria). These caves were exposed shortly after the last interglacial period, whose fauna has been preserved at these sites right up to the time humans began occupying the caves (for geological dating, see the section on shorelines). Further evidence of the Mousterian culture during the same interglacial period can be found in the Alpine caves to be discussed below.

In the classic Charente-Poitou-Dordogne region, there are at least two, perhaps even three levels containing heart-shaped-triular, and sometimes lanceolate, hand axes, along with the other types already mentioned. One of these levels forms the basis of the Cave Mousterian and, as seen, for example, at Combe Capelle and Laussel, still contains a moderate fauna. The other lies roughly, if not entirely, at the end of the series, with an abundance of Late Glacial Ren.

2. GLACIAL STAGES AND INDUSTRIES

In the preceding section, reference was made several times to the geological age of the strata, which allows for synchronization over greater distances. Of course, this can only be determined where there are direct relationships between the stone tool industries and datable geological features. First and foremost, the direct relationships between human remains and glacial levels from the Ice Age **come** into consideration here.

The Mousterian—and specifically, likely an early stage of it (the Pre-Mousterian)—has been found in the very high-altitude cave bear sites of the Alps, e.g., at Wildkirchli and Drachenloch at elevations of 1,700 and 2,400 meters above sea level, respectively, i.e., above the lower glacial limit of the Würm Glacial Period. Another Swiss site, the Cotender Cave, lies within the greatest extent of the Würm Glacial Period, whose moraine filled the cave. Bouichéta, not far from the Ariège in the Pyrenees, is also located within the outermost moraine of the last glaciation. The Mousterian of the cave bear era is therefore partly older than and partly contemporary with the last Ice Age and lasted until the beginning of its retreat. In Taubach and Ehringsdorf near Weimar, it was also found alongside ancient elephants and heat-loving rhinoceroses above a moraine from the penultimate glacial period and beneath traces of the last glacial period.

From Aurillac (Cantal), a heart-shaped hand axe has been found that was initially thought to be Chellian but in reality belongs only to the Mousterian and was situated above a moraine from the penultimate glaciation and beneath one from the last glaciation. A few sporadic finds from the Ain and Jura regions provide similar evidence of Micoquian or Early Mousterian cultures during the last interglacial period, which is consistent with the finds from the terrace of

Villefranche-sur-Saône, featuring unpolished artifacts from the Micoquian and Mousterian periods alongside bones of the Merck's rhinoceros and fallow deer.

However, the regions of Europe richest in ancient cultural remains, such as northern France and southern England, were never covered by ice. How can they be linked to the glaciated areas and to the—as we shall yet see—associated variations in sea level? — It is the stratified deposits on the valley flanks and the differences in their archaeological and paleontological content whose study provides the basis for solving these problems. Over the course of the geological eras experienced by early humans, watercourses have steadily deepened their beds, only to partially refill them and then cut into them again. In addition, during periods of thaw and exceptional moisture, disordered masses of debris (solifluxions) slid down from the slopes to the river or to the valley terraces that bear witness to earlier erosion. Wind, sand, and trickling water have accumulated loam, loess, and sand dunes, which also contain evidence of human activity and help in dating it. Let us first turn our attention to the river deposits.

3. TERRACES AND INDUSTRIES

Every river valley can be divided into several parts that must be considered independently. The watercourse in the plain may be subject to the influence of marine movements in the estuary and, to a lesser extent, even in the middle course. The section, often separated from the lower course by rapids or waterfalls, remains protected from marine influences, and its deepening and scouring action depends solely on the volume of water and the nature of the soil that resists this activity. Each subsection between one natural obstacle—such as a dam or lake—and the next must be studied separately and has carved its course according to its own rhythm. The correspondence between the valley terraces of the upper and lower reaches may be striking, but it does not necessarily indicate that they were formed at the same time.

The upper course of a watercourse flowing down from a mountain range is itself divided into two parts: the mountain course, which passes through areas formerly covered by ice and, in its rapid flow, has left no ancient deposits of its own on the slopes but has only cut into the moraines downstream, and the section at the base of the mountains, where the river enters a plain that may or may not be covered by old glacial deposits, and its bed still cuts into the old pre-Quaternary bedrock. In doing so, it has left behind nearly horizontal accumulations of fluvio-glacial gravel on the slopes graded by its activity, which often form extensive terraces. These are formed by the spread of fluvio-glacial material flowing down from the mountains.

By linking the terraces of the upper course, it is possible—at least for the two or three most recent cases—to determine that an accumulation corresponds to a specific moraine and that the incision of the subsequent stage occurred during the next interglacial period. Each river terrace in this section is therefore of uniform age and bears the younger subaerial deposits (sands, loess, and loam) that were accumulated by wind or runoff.

A detailed description of these conditions would go beyond the scope of this article *[see H. Breuil 1951]*. It will suffice to present an overview based on the stratigraphic position of the individual cultural phases in the terraces of the Somme and the Thames:

	Hand-axe cultures	Flaked Stone Tool Industries
Würm II		Levalloisian VI–VII
Würm I		Levalloisian V
	Acheulean VII	
Pre-Würm		
	Acheulean VI	Levalloisian IV
Riss II	Acheulean V	
	Acheulean IV	Levalloisian II–III
Riss I		
	Acheulean I–III	Levalloisian I Clactonian IIb
Mindel II		
		Clactonian II a
Mindel I		
	Abbevillian	Clactonian I
Günz		

4. SHORELINES AND INDUSTRIES

The marine coastal levels are of particular importance for drawing parallels across wide areas; four such levels are distinguished for the Upper and Middle Paleolithic periods, the highest of which (the Sicilian level) reaches approximately 90 m in Morocco. These are followed by the stages at 60 m (Millazian), 30 m (Tyrrhenian), and 18 m (Grimaldian or Monastirian). The two upper levels contain a clam, Acantina crassilabrum, which is now restricted to Senegal and Chile and no longer occurs in the two lower levels; in contrast, Purpura hemastoma is found there, a species that still lives in Morocco today. Each of these ancient beach levels was covered by a series of fluvial and lacustrine deposits and dune sands cemented into solid rock, as well as by powdery limestone and red clay, which separated them from the zones in direct contact with the most recent coastal strips.

Even the oldest of the four levels mentioned contains tools made by humans. In its gravel zone, there are a few roughly worked erratics and some rolled hand axes from the Abbevillian period. Immediately above this beach, however, a large workshop and a human settlement were discovered at Abderrahman, containing hundreds of artifacts, as well as hippopotamus and rhinoceros bones, all embedded in an extremely hard phosphate breccia: Large Clactonian flakes were worked here into hand axes and, in particular, into Abbevillian scrapers, which is where this industry derives its name, Clacto(no)-Abbevillian. It is replaced by a Tayacian in the slightly higher zone of small fluvial pebbles. This is followed by a mudflat and a Sicilian dune, overlain by the deposits of the Millazian transgression, on whose beach the small-scale industry of the Tayacian is once again found. After a massive sterile deposit of consolidated fluvial, lacustrine, and aeolian layers, the Tyrrhenian Sea, at its highest level, eroded the cliffs and carved caves into the already consolidated dune, into which it deposited pebbles and shell fragments, including, among them, a few isolated rolled Abbevillian artifacts. Acheulean humans lived on this beach, ventured into the caves, and left behind a few tools there. Near El Hank, the Tyrrhenian Sea has reworked and rolled a large concentration of Abbevillian wedges, as well as Clactonian flakes from debris (very different from those of the Sicilian stage at Abderrahman), dating from a period older than that of the beach but difficult to determine precisely. On the new beach, Acheulean humans in turn fashioned countless tools. The Acheulean period continues through the various overlying sub-Areal fluvial, lacustrine, and aeolian deposits and ends with the Late Acheulean or Micoquian period of red clay. The waves of the Grimaldian level also carved caves into the consolidated older dunes, in which Aterian humans and, later, Early Paleolithic humans lived.

In Portugal, a Grimaldian level 10 meters thick has yielded shells of large mollusks, which are likely thermophilic, along with isolated boulders probably belonging to the Languedocian. At this level, which forms the floor of the Furninha Cave, layers of dune sand were deposited when the sea level was low. They contain quite old Mousterian artifacts and a temperate fauna featuring striped hyenas and Merdk's rhinoceros, which, however, here—just as on the Riviera—coexists with the first signs of the last glacial period. The Tyrrhenian marine level here is very consistent and better developed than the others, and contains Acheulean artifacts smoothed by the current. This is followed by further Acheulean and very old Mousterian, then a young Mousterian, followed by a Languedocian, and a small amount of Upper Paleolithic. At Magoito, a Sicilian level has yielded a large quantity of very primitively worked pebbles and very few hand axes.

In summary, we can conclude that humans lived in West Africa and Portugal since the Sicilian stage—that is, on and within the beach that immediately preceded the retreat of the sea during the first Quaternary glaciation (Günz) (Clactono-Abbevillian and Lusitano-Abbevillian). Following a period characterized by Abbevillian and Tayacian cultures, the Mindel-Riß beach gave way to the rich development of the Acheulean and, in Portugal, also of an Early Mousterian. There, these cultures are characterized by a Lusitanian facies. Above the Grimaldian beach, just as in the Mediterranean, lies a Middle Mousterian with thermophilic fauna, followed by a Languedocian that runs parallel to a developed Mousterian.

5. PLUVIAL DEPOSITS AND CULTURES

In the more southerly regions, which—apart from the highest peaks—were spared from glaciation or other direct glacial effects due to their latitude—

and which, in addition to all of Africa, also include the south of Europe, Asia, and Insulinde, it has been observed that large areas experienced pluvial periods of extreme humidity, which correspond to the ice ages of the North and are, on the whole, contemporaneous with them. Here, they alternate with phases of an almost desert-like character and extreme aridity, which correspond to the interglacial periods. As an example, consider the classification established for East Africa:

(5) Present-day dry period:
5. Pluvial (Nakurian): Neolithic
(4) Dry period:
4. Pluvial (Makalian): Transition from the Levalloisian to the Upper Paleolithic
(3) Dry period: Desert-like conditions
3. Pluvial (Gamblian): Levalloisian and Aurignacian
(2) Arid period: Major tectonic movements
2. Pluvial (Kamasian): Acheulean, Oldo-Levalloisian
Abbevillian, Wayen, Clactonian
(1) Arid period: Desert conditions
1. Pluvial (Kagerian): Kafuën

Recent research findings from South Africa are particularly important; there, river gravel and pluvial periods can be roughly correlated with tool industries as follows:

Cross-bedded sands:	Late Acheulean and developed Levalloisian
Younger gravel (Kamasian):	Acheulean and Proto-Levalloisian
Aeolian sands from a dry period	Abbevillian
Older gravel (Late Kagerian)	
Lower elevations:	Abbevillian and Clàcto(no)-Abbevillian
Higher elevations:	Pre-Stellenbosch
Base gravel (Early Kagerian)	

To complete the overview of the stratigraphy of the southern Old World, it should also be noted that during the period from the Second Ice Age to the Third Interglacial, the Kashmir, Burma, Indonesia, and East Asia, and that in northwestern India during the Second Ice Age there was a Clactonian-type flake industry, and from the Second Interglacial onward, in addition to the aforementioned industrial complex, there were also Abbevillian-Acheulean tools.

6. SUMMARY: CULTURAL PERIODS AND CULTURAL PROVINCES

From the chronological positioning of individual industries—as determined at various points around the globe—and their distribution, which could only be mentioned here by way of example, a picture of historical developments and trends can be gleaned. One phenomenon that immediately catches the eye—a very long-lasting and cohesive one—is the handaxe culture, which has its center of gravity in Africa but also extends to Western Europe and as far as India and Java. East Asia, however, was not reached by the handaxe wave but remained, for a long time, a domain of the

Choukoutien culture. The absence of glaciation in the surrounding areas did not force the people here to migrate. We must view the *[Choukoutien group, inhabited by people of the Pithecanthropus type]* Choukoutien group and its relatives in South Asia on the one hand, and the Asian handaxe sites on the other, as two major archaeological provinces, the latter of which is merely an eastern offshoot of the one encompassing Africa and Western Europe, and whose eastern boundary on our continent seems, by and large, to be formed by the Rhine, the Adriatic Sea, and the Caucasus.

This is contrasted by another region where the hand axe was originally unknown and which instead utilized flake tools. In England and northern France—as shown above—an alternating occurrence of hand-axe and flake tool industries can be observed, with the latter occurring immediately before and after the glacial periods, while the former date to the warm interglacial periods. It seems plausible that this alternation stems from the fact that, as the ice ages approached, the population retreated westward and southward, following the game species on which they depended for survival. It is evident that the hand-axe people followed the heat-loving animals, while their counterparts remained near the ice margin with its Arctic fauna. It therefore goes without saying that hand-axe-free Central Europe, which was affected by cold environmental conditions earlier than the West, was more likely to have been settled by the flake-tool makers. This can be demonstrated on the basis of the finds. For example, in Markkleeberg near Leipzig, a Levalloisian culture corresponding to Western European Period III/IV appears as early as the end of the Mindel-Riss Interglacial, and the Mousterian near Weimar appears as early as the Riss-Würm Interglacial—that is, considerably earlier than was outlined above for the Somme. The example of the Tayacian best illustrates how closely handaxe and flake-producing groups can occasionally coexist; it provides evidence of a flake-producing culture in part of the Périgord during a period that undoubtedly runs parallel to a large part of the Acheulean and predates the final phase of the Micoquian. It is all the more surprising, then, that despite the proximity of the Bergeraquois and the Charente—where the entire Acheulean is fully developed—hand axes appear only rarely in the Tayacian. Rooted in the Clactonian, the Tayacian also absorbed only minor influences from the Levalloisian and paved the way for the Mousterian.

Further south, throughout the entire Upper and Middle Paleolithic, the handaxe and flake-tool cultures were constantly intermingling, as there was no ice front against which the population here would have had to retreat—

or approach it anew. Thus, even in the Sicilian phase of Morocco, a close intermingling of the Abbevillian and Clactonian cultures can be observed.

In later periods and further north, such intermingling becomes more frequent and regular. For certain flake-tool industries, such as the Levalloisian V and certain Moustérien levels in southern France, the inclusion of hand axes is indeed one of their most important characteristics. In general, the Mousterian brought about a far-reaching standardization—or, more accurately, dominance—over various basic industrial strata across large parts of Europe and the Mediterranean region. It appears that the typical Mousterian, which already existed in Central Europe during the last interglacial period *[as the culture of the Neanderthals]*, first penetrated the Levalloisian III/IV of northern France and Belgium in the form of a steadily increasing, noticeable influence, then reached northern Italy and Croatia during the period of the low sea level at the beginning of the Würm Glacial Period, and from there *[carried by the Neanderthal race]* advanced into southwestern France and Europe as a whole, where the Tayacian *[which produced a non-Neanderthal type of Sapiens; cf. J. Kälin, p. 85]*, while further north it combined with the Levalloisian and, in the southern Mediterranean, was essentially rooted in the Levalloisian. In the upper layers of the southern French Mousterian, the approach of Upper Paleolithic cultures ultimately led to the formation of the Abri Audi facies at various sites.

This development, spread, and interpenetration of the individual cultural groups and trends—outlined here only in broad strokes—is based primarily on research into stone tool industries. For other aspects of daily life, we must turn to a more detailed study of the circumstances of the finds and the general conditions at informative sites, particularly cave sites, and in especially significant areas.

IV. OVERALL PICTURE OF THE CULTURE OF THE EARLY AND MIDDLE PALEOLITHIC

1. MATERIAL CULTURE AND ECONOMY

The ergology of Early and Middle Paleolithic humans has already been discussed. Since the most important raw material was easily flaked stone, it is not surprising that the sites are located near deposits of

of this coveted raw material. Stone suitable for working is not found everywhere. Vast areas are devoid of it. If it is not found in a given region, it must be laboriously transported and used sparingly, or obtained through barter with tribes living in better-supplied areas. As a result, regions that are poor in or devoid of usable stone provide only scant evidence for the earliest periods of the Stone Age, whereas in later periods trade had already become firmly established.

Since the Mousterian (Middle Paleolithic), the regular transport of flint and jasper over distances of several dozen kilometers can be documented, for example, at La Chapelle aux Saints near Brive (Corrèze).

In Portugal, the conglomerates eroded from the highlands by watercourses during the Triassic, Cretaceous, and Jurassic periods, as well as throughout the Tertiary, contain large quantities of quartz and quartzite pebbles; during the Quaternary, other eroded deposits spread into side valleys on the hillsides and in the main valleys. They also frequently contain flint in sometimes large nodules and pebbles that have been eroded from disintegrated Cretaceous strata, and it is also found in deposits where these strata have been preserved. Other rocks (basalts, andesites, dolerites, and even solid limestones) could also be used. Incidentally, not all of them are preserved in open terrain (ophites, limestone). Flint extracted from the stratum is the best, because it has not been fractured by the heat at the Earth's surface. In contrast, quartz and quartzite in the form of pebbles are preferable because the process of rounding has left only the hardest parts, and because their rounded and smooth surfaces can be used as grip surfaces, whereas angular blocks require the edges to be blunted to avoid injuring one's hand.

The obsidian deposits at Mt. Alageuz (Persian Armenia) have also been mined throughout history. In South Africa, the gravel deposits of the Vaal River and its tributaries (basaltic stones and hardened shale) have been exploited so intensively since the earliest Stone Age (e.g., at Pniel near Kimberley) that the river literally flows through a bed of ancient pebbles worked during the Acheulean period. In Victoria West, people have quarried the overlying rock—due to a lack of boulders—with the same intensity. It would be easy to continue this list.

Throughout history and in all regions, humans have defended themselves against...

by settling in places where they were sheltered from strong winds, rain, snow, excessive heat, cold, and flooding. Like animals, they had to change their dwellings according to the seasons as long as they were content to seek out natural shelters. Very soon, humans learned from wild animals the advantages offered, from this perspective, by open rock shelters during the warm season and caves in winter. Although too cool in summer, most of the latter became quite pleasant in winter. They then had an average temperature of 12–14 degrees Celsius, while outside temperatures plummeted to as low as 50 degrees below zero. Ever since humans —and this was certainly the case very early on—had mastered fire, tamed it for lighting purposes, and invented quick-acting means to rekindle an extinguished hearth fire or wick, they were able to move freely through the dark, labyrinthine passages. However, they set up camp exclusively at the entrance. There they kept the fire going to cook, keep warm, and ward off unwanted visits from large animals. In winter, the smoke—drawn outward by the warm airflow escaping from the cave (in summer, the opposite occurs)—prevented the air inside the cave from becoming stifling. Accordingly, accumulations of ash and waste are found at the entrance or on the more or less large and level plateau in front of it. Just as the crumbling of the "gable" caused the entrance to shift backward over time, the more recent living areas are also generally located further and further back compared to the older ones. They are usually situated on a gradually rising embankment of rock debris interspersed among the increasingly thin layers of artifacts. This has steadily reduced the habitable space, thereby depriving it of sunlight and air. Eventually, the cave's entrance was no longer a desirable place to stay. However, it could still serve as a cellar, a temporary refuge, a burial site, or a place of worship.

The caves—and, to a certain extent, the rock shelters as well—were not inhabited year-round, at least in areas exposed to the Ice Age climate. One usually finds here the shed antlers of adult reindeer and young antler tips still attached to the bone, which suggests that hunters stayed there from November through February. This is because the young antlers fall off only in the spring, while adult animals—with the exception of females—shed theirs only toward the end of autumn.

At the onset of warmer weather, the hunters of that era scattered throughout their hunting grounds, where they led a nomadic existence *[cf.*

the recent hunter-gatherers: W. Schmidt, p. 403]. In doing so, they used shallow rock shelters—which in our regions were predominantly oriented toward the south or east—or even erected light huts made of branches or grasses that could be quickly dismantled, as required by the migrations of their game.

The rock shelters, most of which were located only slightly above the watercourse, were undoubtedly inhabited more continuously than the caves. Perhaps part of the group in question—women, children, the elderly, and the infirm—remained there while the men set out on hunting expeditions to greater distances. Access was securely protected against predators by breastworks made of stacked stones, which may have been reinforced with thorny bushes. A fire kept burning constantly—especially at night—could keep dangerous animals at bay, and a sentry undoubtedly kept watch against any attack from them.

The most important of all the essentials of life, which undoubtedly played a significant role in the selection of settlements, was water. The banks of rivers, streams, rivulets, and ponds were just as suitable as the vicinity of springs. In regions with a pluvial-Atlantic climate, there are many such sites at various points across the landscape. In today's desert regions, however, the issue becomes more complicated because pluvial phases here have alternated with dry periods. In the Sahara, for example, rivers and lakes have dried up and receded, only to refill and expand again in other stages. Consequently, one also observes that Upper and Middle Paleolithic cultural relics recede further and further as the water sources around which early human tribes gathered were depleted. Along the edges of certain lakes (Moeris), one can see the ancient settlement sites gradually following the retreat of the former water level, which is marked by ancient shoreline traces.

Sometimes nature provided humans with underground water supplies hidden in the dark galleries of deep caves, where humans eventually discovered them. This enabled them to survive dry periods even in limestone regions where rain seeps away completely.

Living near water sources offered humans the added advantage that these sites were also frequented by animals. Livestock raising and crop cultivation were still unknown to them; thus, they had to meet their food needs through hunting and gathering. Since large game in particular requires a watering hole or even a pool in which to bathe during the hot season, this is a suitable location for the

hunting, where game can certainly be expected. In hilly terrain, however, it is the approaches to these watering holes rather than their immediate surroundings that are best suited for this purpose. Hunting along these trails does not scare the game away permanently. Sunken paths with steep walls—such as the many side valleys of the valleys carved into the limestone plateaus of Aquitaine, which lead from the forested or pasture-covered highlands into the narrow valley—offered excellent hunting opportunities. The herds of game followed fixed seasonal migration patterns. At the beginning of summer, they grazed on the wooded slopes and, during the colder months, descended again through the narrow valleys that led them back to the plain. Their exit points, situated between the mountains and the valley, are therefore ideal locations for ambushes. The same applies to the permanent, well-established trails that the reindeer followed during their seasonal migrations and which stretched over very long distances. Every year, despite the ambushes that regularly take them by surprise, Canada's reindeer cover 3,000 km in every direction. Les Eyzies during the Ice Age was certainly situated on such a trail.

Hunting certain species that preferred the mountains or the plains required humans to undertake expeditions across considerable elevation differences. The cave bear of the last interglacial period frequented the high-mountain caves of Switzerland, the Pyrenees, and so on. Despite the dangers of this hunt, its meat and fur were a coveted treasure for the Mousterian and Pre-Mousterian people of that time, and they did not shy away from tracking down the cave bear at altitudes of 1,700 (Säntis) or 2,400 meters (Drachenloch). They consumed the meat on the spot and left behind only a few roughly worked stone flakes, the charcoal from their fire pits, and conspicuously sorted, worked, or used bones as evidence of their temporary presence.

Since their gathering activities consisted largely of perishable plant matter, we can say very little about them. The gathering of marsh birds' eggs must have played a major role in food procurement in the spring, alongside hunting, just as is still common today in many uncivilized countries. The proximity to a shallow and very extensive lagoon such as that of Janda (Cádiz) was highly suitable for this type of foraging.

It is also worth noting that humans, in certain cases, chewed on bones—specifically spongy bones, that is, those filled with fatty substance. Since humans have only their canines and incisors (four in number, instead of six as in carnivores) to

, with the upper central incisors being particularly strong and the canines only slightly stronger than the incisors, the marks left by human teeth on a large spongy bone are easily recognizable. And I can assure you that such bones are not uncommon in the Mousterian layer at Castillo (Santander) in northern Spain. They had, of course, been broken beforehand.

In mountain streams, fishing—especially for trout—was always practiced, probably mostly with bare hands, but also using traps made by arranging pebbles, which are frequently found on the coasts of oceanic islands. The mass migration of salmon and other fish upstream during the spawning season in the boreal regions is so intense that at times there are literally more fish than water, so that on certain days all carnivores, including humans, require no equipment whatsoever to catch them.

There is no evidence of marine hunting for whales, seals, and cod during the Early Stone Age *[see J. G. D. Clark, p. 330]*, with the exception of a few porbeagle teeth and a seal jawbone. The former were likely taken from a carcass washed ashore, which has always been a delicacy for certain peoples. The latter, which are incidentally very rare, likely attest merely to a fortuitous encounter on the coastal cliffs.

2. SOCIETY, LANGUAGE, AND INTELLECTUAL LIFE

Even the diverse, highly specialized, and functional techniques of toolmaking, as well as the forms and types of weapons and implements, attest to a degree of inventiveness and purposeful planning and design—and thus, ultimately, to a creative intellectual activity that leads us to expect a rich intellectual life in other areas of culture as well. Although we cannot yet fully grasp the social bonds within which humans lived, we can at least surmise their existence from the facts of economic activity just described. As early as the Early Pleistocene, humans hunted the large game of their time, which was certainly not the act of a single individual but a planned communal effort. The preparation and execution of such an undertaking, the distribution of the spoils, etc., allow us to discern the existence of stable communities that certainly exceeded the size of a nuclear family *[as is the case with today's hunter-gatherers] [cf. W. Schmidt, p. 401 ff.]*. Moreover, they also required

as the transmission of cultural assets and achievements, a language that was at least sufficiently developed to include action verbs and the most important indicators of place and time.

No works of art from the Upper and Middle Paleolithic are known *[just as is the case with recent basic cultures]*. A large portion of the stone tools, especially the Acheulean hand axes, is, however, so perfectly formed and regularly shaped that an aesthetic sensibility —a pronounced sense of good and pure form—was certainly at work here, especially since these characteristics of the artifacts *[cf. F. Eppel, p. 357]* cannot be explained as technical improvements. Only a few pieces of earth pigments and rubbing plates found in the Mousterian period attest to humans' need for adornment. A bone fragment with incised lines has also been found at La Ferrassie, but this may represent a Late Paleolithic influence on a very late Mousterian artifact.

There is still no evidence of burials from the Early Paleolithic or part of the Middle Paleolithic. However, this does not rule out the existence of funeral rites. Even today, the Australians, the Andamanese, and other tribes practice such rites in which the body is not buried. Among the former, the body is left to decompose on a platform suspended between the branches of a tree, and the bones, once stripped of flesh, are scattered, with the exception of a few: the skull and lower jaw, which are often reverently preserved or even carried by relatives. Elsewhere, the right arm bone is the focus of a ceremony that concludes with its breaking and burial in an anthill (perhaps to neutralize the presumed harmful power of the deceased). Among the Andamanese, the most important bones and the skull are tied together, dyed red, and hung in the hut. On festive days, they are anointed with fat and take part in the celebrations. Such rites, of course, leave few traces in an archaeological stratum. Nevertheless, one can infer from such customs that at Choukoutien, the remains of skulls and lower jaws absolutely predominate over those of other body parts *[cf. W. Schmidt, p. 469]*. The possession of family skulls, a pledge of the ancestors' spiritual protection, seems to mark the beginning of the skull cult. The possession of the skull of any enemy—often one killed in war, but also of peaceful strangers treacherously attacked—becomes a pledge to harness their spiritual powers. It is known that ritual cannibalism of deceased family members or slain enemies is based on similar beliefs. Cases of anthropophagy, which many also attribute to Choukoutien, may have originated in the Mousterian-

cave at Krapina (Croatia) and at other sites, particularly among young and female individuals.

A number of discoveries from various Early and Middle Paleolithic periods may also be attributed to skull cults: two skulls found together without other skeletal parts at Saccopastore near Rome; the skull deposited on the floor of the small San Felice cave on Monte Circeo in Italy; the children's skulls from Gibraltar and La Quina in the Charente, etc.

Burials apparently did not occur until the Mousterian period and took place at the same site where the living resided; it seems that their tribal kin continued to live there even after the burial. A shallow trench was dug, and several stone blocks were placed on and around the body, which was buried in a sleeping position. Sometimes beautiful flint pieces were scattered on the surrounding ground. A piece of game or a hunting trophy was buried nearby at La Chapelle (Corrèze) and Le Moustier (Dordogne). Sometimes a body lay alone; other times, two were found close together, as in Spy (Belgium) and La Ferrassie (Dordogne), or even more, as in Mugharet el Wad (Palestine). Burials of very young children were observed near the main burial sites at La Ferrassie and Le Moustier.

But alongside the care shown toward some of the dead, human remains are occasionally found scattered without any regard among the kitchen waste that forms the settlement layers. In particular, the isolated lower jaws and fragments of skull tops also attest to cannibalism or rituals reminiscent of those at Choukoutien during the Middle Paleolithic. Occasionally, skeletons have also been discovered that appear to have been bound, as if people feared the return of the dead. Whether out of fear of the dead or loving care for them—in any case, we must conclude from this that there was a belief in an afterlife.

We may safely assume that people who held certain conceptions of the afterlife—even if the details are unclear to us—also worshipped "deities." These creators and rulers of the world, dispensers of all riches, have been the object of worship in one form or another at all times. We have no means of directly lifting the veil that conceals human conceptions of nature and the forces behind it. In the high mountain regions of the Alps, however, the skulls and long bones of cave bears are deposited on stone slabs or in stone boxes in such a way that many are justified in seeing in them the remains of sacrifices offered to supernatural powers.

It is difficult to say what form these took. Based on ethnographic parallels, however, it is believed that one can infer the concept of a supreme being, a father deity, to whom the best part of a hunt's spoils was offered as the share due to him—that is, to the creator and giver of all things *[i.e., a kind of primitial sacrifice. See W. Schmidt, p. 492].* Be that as it may, the scant evidence that has come to light so far certainly demonstrates that even humans of that distant era had spiritual needs and had developed concepts that elevate them far above animals and place them on a par with us.

THE LATE PALEOLITHIC
LATE PALEOLITHIC

BY ALFRED RUST

I. TOOLS, WEAPONS, AND MIGRATION PATTERNS

The artifacts produced by Upper Paleolithic humans differ fundamentally from those of earlier periods. In the Late Pleistocene flint industries—the hand-axe and flake cultures of the Late Acheulean, Tayacian, Mousterian, and Levalloisian periods, the latter exhibiting blade features suggestive of the Pre-Aurignacian—tools were predominantly made directly from core pieces or from broad, robust flakes *[see H. Breuil, p. 266 ff.]*. The defining characteristic of the new industries, by contrast, is that the flakes detached from the core are blade-shaped and roughly as long and wide as a finger. We therefore refer to this as a blade culture.

The finer craftsmanship of the tools of Upper Paleolithic Homo sapiens *[see H. Vallois, p. 99]*, compared to that of the flake cultures, likely went hand in hand with the production of smaller implements and weapons made of organic materials such as wood, bone, antler, and horn. In general, the size of the stone tools—which in the Upper Paleolithic is sometimes quite substantial—corresponds to the size or even the coarseness of the weapons and implements made of organic material that were produced with their aid. In addition to their small size and more delicate forms, Upper Paleolithic artifacts are characterized by the fact that their tool inventory reveals a far greater subdivision into specialized types than in any handaxe or flake-producing cultures. As a rule, approximately 30 tool types can be identified from a fully documented Upper Paleolithic stone tool industry. In addition to knives and scrapers—which have been used since the very beginnings of humanity—chisels, drills, and arrowheads become more prominent. These are supplemented by tools and weapons made from bone and antler. Regionally, these may also develop into distinctive features, as is the case, for example, in the Northern Groups to be discussed later.

However, the 30 artifact types mentioned should by no means be taken to imply an equal number of basic forms. Rather, one must bear in mind the following: An older flake industry may include multi-purpose tools on which, for example, a notch has been carved out, next to which a nose-like projection protrudes, and

furthermore, perhaps a chipped corner that resembles a drill bit. The Upper Paleolithic generally does not feature such multi-purpose tools, which are often difficult to interpret unambiguously. Rather, an artifact always represents a single tool designed for a specific purpose. For example, there are blade scrapers whose upper working end is chipped to be round, slanted, straight, concave, or pointed. Among the gravers, which, with their narrow cutting edges, were used to create grooves and channels—similar to today's graver or chisel—we distinguish about ten specialized forms, aside from their varying widths and classifications as corner, edge, center, and curved gravers, etc. Other pieces, in turn, are fashioned as drills, saws, and the like. It hardly needs mentioning that almost every flaked blade, in its unworked state, constituted a knife with a cutting edge that was often razor-sharp. Scrapers are also divided into several types. These are broad, tall tools used like planes, for the manufacture of which the remnants of core stones (nuclei)—from which blades were flaked—were also utilized.

In addition to such tools, whose function can be clearly identified—as reflected in their names, such as "scraper" or "drill"—there are others whose purpose remains unclear. These have been named after the sites where they were first discovered. Some of these are of great significance as so-called "key types" of Upper Paleolithic cultural groups, namely the Chatelperron points, which are retouched in an arched shape along one long edge; the narrower Gravette points, also named after a French site; and the Kremser points, which are also known as Font-Yves points in France and the Near East and are more finely and bilaterally worked. The geometrically shaped small tools, which were not yet very common in the Upper Paleolithic but strongly defined the typology of the Mesolithic, are called microliths, with subcategories based on their respective shapes, such as triangular microliths *[see J. G. D. Clark, p. 321]*.

The cultural landscape of the Upper Paleolithic is greatly enriched by the now numerous bone tools. Such tools were not produced, or only rarely, during the Upper and Middle Paleolithic, with the possible exception of the groups of the interglacial and Würm-Iglaacial Pre-Aurignacian, as well as those influenced by them, whose remains appear to already exist, primarily from South Slavic and Hungarian sites.

In addition to bone tools such as chisels, hammers, smoothing tools, pressure sticks, awls of all kinds, and—in the western Magdalenian—also

sewing needles with an eye, as well as so-called "command sticks," i.e., decorated antler rods with one or more holes, and large shovel- or oar-like tools made of mammoth bone in the Aurignacian of Moravia and Southeast Europe, bone weapons such as spears and arrowheads are also found, some of which are decorated or feature so-called blood or poison grooves. The latter are slotted at what is presumed to be the base of the shaft, beveled, or conical with a rounded tip. In the later groups, single- or double-row serrated harpoons are added, which were used not only for fishing but, as has now been proven, also for hunting large game.

The bone tools and weapons have, in some cases, been transformed into true artistic masterpieces through incised or carved ornaments or figures. The bone objects were often smoothed to a high polish, whereas the polishing of stone tools was not yet common in the Upper Paleolithic.

These cultural expressions, which have been presented here in overview and which stand in sharp contrast to all Early and Middle Paleolithic groups, enable us to trace the Late Paleolithic people back to their ancient habitats even when no physical remains of Homo sapiens are present there. Furthermore, the diversity and artistic craftsmanship of the tools and weapons allow us to evaluate the typological differences much more thoroughly for assessing their distribution and for detecting major migratory movements than is possible with older cultural groups that are less diverse in terms of artifact types.

Thus, with the help of the aforementioned typological differences in artifacts, we are able to divide the Upper Paleolithic population into many cultural groups, but we are still far from being able to make detailed judgments about these groups. For there can be little doubt that humanity during the Late Glacial period had already divided into numerous splinter groups. At that time in Europe—to name just one figure—there may have been perhaps 100 small tribes that—while, of course, always operating within the framework of generally accepted ways of life—nevertheless led a certain independent existence. This is likely the only way to explain the diversity of typologically discernible differences.

The oldest known Upper Paleolithic-type industries to date are found in the Pre-Aurignacian of Syria and Palestine, which is intercalated within Middle Paleolithic strata. Similar phenomena may also have spread to Europe. Traces of this kind are found in the El Sotillo Cave in Spain (and probably at one or two other sites

Central Europe, e.g., Weimar). However, no further development took place at any of the sites mentioned; rather, these earliest industries of the Upper Paleolithic type in Europe, as well as in Syria-Palestine, were overlaid by Middle Paleolithic groups and apparently pushed back to their place of origin. We can probably also identify these advances in the Homo sapiens elements of the human remains from Mount Carmel [cf. J. Kälin, p. 80] (and likely also from Weimar), which, however, were unable to prevail against the Neanderthals. Somewhere and at some point, the Upper Paleolithic must have developed from older forms, likely of the type characterized by a blade-bearing flake industry. However, we can already state with certainty that this did not occur in the areas of Europe, the Near East, and Africa that have been studied to date. Apart from the isolated precursors mentioned, the Upper Paleolithic penetrated this region as a fully developed phenomenon on a broad front; it was carried by Homo sapiens and overlaid and displaced the more primitive Middle Paleolithic cultures of the Neanderthals. Before discussing the question of its origin, let us examine this process in somewhat greater detail.

The Upper Paleolithic itself is generally divided into three main groups: the Aurignacian, the Solutrean, and the Magdalenian. As the names suggest, these cultures are named after the French type sites where they were first recognized as distinct cultures. However, these names—which have been in use for decades—do not apply to the entire range of Late Paleolithic Homo sapiens; for example, neither the Solutrean nor the Magdalenian are found in Eastern Europe or the Near East. The corresponding stone tool industries in those regions show only the Aurignacian types, which are fairly rigid and have undergone little change. In addition, during the Magdalenian period, the Hamburg Group is found between northern Germany and southern England. It has long been recognized, however, that even in Western Europe, the umbrella term “Aurignacian” is no longer sufficient to describe the lower stage of the Upper Paleolithic. In particular, detailed investigations in southern France have demonstrated that this period by no means can be assumed to have been inhabited by a uniform population, but rather that there were several groups whose remains partially overlap in the cave deposits.

Since the purpose of our treatise is to provide a clear overview of the origins and development of Upper Paleolithic humanity, we must refrain from discussing in detail the distinguishing and connecting characteristics of the individual major groups or subgroups.

The deepest strata in southwestern Europe, the Chatelperronian (or Early Périgordian) *[featuring the Combe Capelle type of the Aurignacian as defined by Eickstedt; see p. 119]*, are followed by the typical Aurignacian *[sensu stricto] [with the Cro-Magnon race sensu stricto, i.e., excluding the Moravian variant: cf. H. Vallois, p. 101, E. v. Eickstedt, p. 119]* and the Gravettian (or Late Périgordian), which are distinguished from one another, among other things, by

in that the Aurignacian features bone points that are split at the base in a dovetail pattern, whereas the Périgordian has only points with a conical lower end. The former also features thick, so-called "keel scrapers" made of stone, while the latter features "blades with a blunt back," which are clumsy and broad in the Chatelperronian (Chatelperron points) but fine and narrow in the Gravettian (Gravettian points). These cultures are also grouped together under the broader term "Aurignacian." The corresponding Upper Paleolithic period in Italy and along the Riviera is referred to as the Grimaldian.

Evidently, the Gravettian culture, which had migrated into France, also extended as far as Spain. This is indicated, for example, by the lowest-lying artifacts in the Parpalló Cave (Gandía), which also reveal an incursion of the Solutrean culture into these areas. During the Middle Upper Paleolithic, a new wave of people entered southwestern Europe: the Solutrean culture, characterized by the use of a double-sided laurel-leaf point. The region of origin for this group was likely the area of Hungary and southern Slavic lands. The Solutrean was assimilated by the local population in southwestern Europe, and it gave rise there—as the most recent glacial phase—to the Magdalenian, which is divided into six groups and, beginning with Stage 4, featured barbed harpoons *[involving people of the Cro-Magnon race sensu stricto, see p. 292, and the Chancelade form sensu stricto, i.e., excluding Combe Capelle; see H. Vallois, p. 102, E. v. Eickstedt, p. 120]*, which also flourished in northern Italy, Spain, and southern Germany.

If we now turn our attention to the Arab countries, specifically Syria and Palestine, we find there as well Aurignacian strata of an older character following the Mousterian. They are reminiscent (with sporadic occurrences of the corresponding types) of a Chatelperronian. However, the further development of the Near Eastern Upper Paleolithic population does not appear to have been disrupted by the immigration of foreign groups, as the typological development proceeded uniformly amid an almost stagnant adherence to the old forms. Only in the most recent phases of the Near Eastern Upper Paleolithic—for example, at Jabrud, starting with Layer 3 of Shelter II—might an infiltration originating in southeastern Europe become apparent. The Near Eastern Aurignacian industries (sensu lato) lack: bone points with a split base; the notched and stemmed points found throughout the European Late Aurignacian (= Gravettian); and, furthermore, as a particularly distinguishing feature, any Gravettian points whatsoever. The latter, as far as can be seen so far,

appear only in the Late Mesolithic Falite culture at Jabrud, where they are found immediately below the older Natufian *[cf. J. G. D. Clark, p. 324]*. The few bone points known to date from the overall Aurignacian there—about a dozen in number—are of the type with a conical base and are therefore not unlike those of the Périgordian. Upper Paleolithic art objects and female statuettes *[cf. F. Eppel, p. 358 ff.]* have not yet been found in this area.

As we have noted, both the southwest of our continent and the regions bordering southeastern Europe were continuously inhabited by human populations during the Upper Paleolithic. To date, there is no evidence to suggest that Africa could have been the cradle of the blade cultures. On the other hand, recent detailed studies have shown that the age of the North African Upper Paleolithic decreases from the Nile region toward the west. Cultures of a pre-Aurignacian type have not yet been identified in North Africa. The blade finds present in East Africa within late Acheulean strata can most likely be traced back to the Syrian-Palestinian Pre-Aurignacian. It is generally accepted that the complete spread of Late Paleolithic humans of the Homo sapiens type across Africa began quite late. Late Paleolithic finds in North Africa exhibit a Capsian character, while those in Egypt exhibit that of the Sébilien [cf. K. J. Narr, p. 505].

Let us therefore tentatively consider the broader context of the entire development! Given the lack of relevant, well-documented evidence, Africa and East Asia cannot be regarded as cradles of this development. As far as we have been able to determine so far, the only possible habitat for the Riß-Wurm interglacial Pre-Aurignacian people is Eurasia, specifically the regions west of the Central Asian high mountains. This vast region likely does indeed delineate the center of development for early Pre-Aurignacian humans *(with an earlier, more advanced hunter-gatherer culture)* [*see K. J. Narr, p. 510*].

The bearers of the Pre-Aurignacian culture thus lived—as did the Upper Paleolithic people later on—in an area north of the settlement areas of more primitive, heat-dependent populations of the Neanderthal type. During the interglacial period, these groups dominated those regions of Europe and Asia that are bounded in the north and east roughly by the line Hamburg–Warsaw–Kyiv–northern tip of the Caspian Sea, and from there extending across to the high mountains and along their northern edges into northern Siberia. The immensely vast regions lying north of this line were open to the Pre-Aurignacian people, and they

have also lived there. It is inconceivable that interglacial humans would not have utilized these areas for hunting. The climate during the last interglacial period was warmer in Europe than it is today, and there is no reason not to believe that interglacial Homo sapiens ventured just as far north as modern humans do—that is, as far as the coast of the Arctic Ocean. In suggesting such possibilities, we must not make the mistake of attributing limited intellectual abilities to pre-Aurignacian humans—abilities that would not have allowed them to venture into areas that might have harbored dangers which, in our opinion, they would not have been able to overcome.

Taking all the circumstances of the last interglacial period into account, therefore, there is nothing to preclude the assumption that the entire northern region was settled, and we also believe that our interglacial hunters possessed the necessary technical skills to penetrate the treeless northern tundra regions. It would be absurd to believe, for example, that the oldest evidence to date of the use of bows and arrows and tents in the Late Paleolithic Hamburg Culture implies that these cultural achievements were only invented at that time. Since the Late Paleolithic people of the Ahrensburg Phase 3 used three different types of wooden arrows, and four different types of Upper Paleolithic tents have been found to date in the Hamburg area—two of which belong to the Hamburg Phase, one to the Ahrensburg Stage, and another to the Magdalenian culture—which was culturally distinct from these river hunters—it may be concluded that the long-range weapon and the portable dwelling were widespread throughout the Upper Paleolithic, and there is no reason not to believe that they were already known in the Pre-Aurignacian period.

The hypothesis of a settlement area extending as far as the Arctic Ocean may seem highly speculative, but the fact of a sudden and large-scale appearance of Upper Paleolithic peoples throughout Central and Southern Europe presupposes a vast hinterland. This is all the more true since we believe we can discern various culturally distinct waves of invasion. However, if we ask about such interglacial traces of settlement above the suggested boundary line, we must admit that none have been found to date. This does not necessarily contradict our assumption, however; for research in lowland areas faces more difficult challenges than that conducted in cave regions, since caves, as the focal points of settlements, attracted prehistoric humans

and are for the most part easily identifiable today. Even in loess-free lowland areas, there are no major difficulties in discovering Ice Age encampments, provided they were established after the Würm glacier had receded, since the surface of the land has not undergone any further profound transformations. One need only follow the watercourses in the lowlands, near which Ice Age humans typically lived. The interglacial surface, which would provide us with the same clues for excavations, has, however, been completely destroyed in the north; it has been overrun, reworked, and redistributed by the ice, and is covered by thick layers of moraine debris. Even in the loess regions not directly touched by the ice, Early Paleolithic settlements are generally revealed to us only by chance—for example, through industrial excavation of soil layers, through erosion that creates ravines, and the like.

If, then, we consider the totality of the interglacial Homo sapiens groups—whose numbers must have been considerable, as evidenced by the powerful, broadly advancing Aurignacian (sensu lato)—in a single region, which was vast and offered ample opportunity for the free development of physical and cultural characteristics, then only the northern region described above can be considered a candidate *[cf. K. J. Narr, p. 510]*. Starting from this region, the waves of invasion visible to us might perhaps be interpreted and understood as follows:

The first advance can be identified in the emergence of Pre-Aurignacian cultures of the Jabrud-Atlit type (Syria) and perhaps El Sotillo (Spain). The agents of this late-glacial advance were likely groups that occupied the southernmost regions of the aforementioned habitat, and their stone tool industries could also be termed "Pre-Châtelperronian." This wave of invasion was largely absorbed, as it occurred in an area occupied by Neanderthal-like groups with Middle Paleolithic handaxe and flake tool industries, who were also adapted to a temperate climate and did not vacate these districts before the end of the Würm I glacial period.

The first major advance took place during a warmer interglacial phase of the Würm Glacial Period (Würm I/II) as far as the southern border of the European continent, which had now been vacated or cleared by the Neanderthals. The typological characteristics of this first major Upper Paleolithic wave (Chatelperronian) exhibit the same traits as those characteristic of the preceding pre-Würm period, and one might be inclined to believe that these were the same Homo sapiens "southerners."

A second wave, originating from regions further to the north,

group distinguished by its artifact typology *[presumably of Cro-Magnon type, cf. E. v. Eickstedt, p. 119]* may have been the bearers of the Aurignacian proper *[sensu stricto]*. It also advanced as far as southwestern Europe.

It remains unclear to what extent one might, within the context of the undoubtedly emerging migratory movements, assess a possible preference for or aversion to caves, as well as the hunting motivations of individual population groups, as indicated below in the discussion of hunting and settlement patterns.

In the Near East, the people of the Pre-Aurignacian as well as all Upper Paleolithic cultures were cave-dwelling; in southwestern Europe, the Chatelperronian, Aurignacian, and Gravettian cultures were likewise cave-dwelling. Furthermore, the Solutrean and Magdalenian people lived in caves there. In Central and, above all, Southeastern Europe, however, even larger groups—such as those at Předmost and Unterwisternitz (Moravia), in Ukraine, and at many other sites, indeed across extensive regions—settled permanently in the open air, even though they lived in the vicinity of caves, specifically those that were demonstrably uninhabited and could easily have been reached and occupied.

Perhaps it is not far-fetched to assume that these groups—which stood out, among other things, for their ornamental artistic style *[and were associated with the Brno group of the Aurignacian, cf. H. Vallois, p. 101] [i.e., the offshoots of the East European-Siberian circle; see K. J. Narr, p. 509]* are groups that once settled quite far to the north and continued the traditional practice of living in the open even later on.

An individual comparison of the typological characteristics of the artifacts may help us further clarify the mystery of Upper Paleolithic population movements. However, this task will not be easy to accomplish, as there are indications of limited return migrations. Furthermore, there is some evidence to suggest that the Loess Settlers do not yet represent the northernmost group of the incoming Upper Paleolithic Homo sapiens population. North of the loess groups, who lived as stationary game hunters in a taiga-like environment, there may very well have been others who, as tundra dwellers, constantly practiced drive hunting—as bearers of a kind of “pre-Hamburgian” culture.

A small example will illustrate just how far we still are from actual knowledge. Setting aside Syria and Palestine, we are likely aware of about a thousand sites in Europe yielding remains of Upper Paleolithic culture. At nearly all encampments, tools and weapons have been found that—if the expression is permissible—can be reduced to a common denominator. Among the bone tools, which

are found by the thousands, it is above all the recurring **spear points**, **awls**, **chisels**, etc. Toward the end of the Upper Paleolithic, however—roughly during the heyday of the Magdalenian—a cultural group emerges in the north—and extending northward from the southwestern and Central European Magdalenian regions—that, as the bearers of the Hamburg Phase, exhibits a distinct cultural character. For example, its stone tool industry does not include any of the Gravettian types otherwise widespread in Europe; on the other hand, it features highly developed specialized tool forms made from antler, such as pull-knife handles—the so-called "strap cutters"—which are unknown from any other settlement in Eurasia. The predominantly ornamental art style of the Hamburg Phase, with its meander ornamentation, aligns with the artistic traditions of the East. However, if we take all the distinctive features of the Hamburg River Hunters' way of life into account, we cannot directly link them to any Upper Paleolithic group in Europe, and for the time being, the Hamburg group appears to have emerged from nowhere in the context of archaeological science.

Our understanding of the way of life of the Hamburg hunters is more comprehensive than what we have been able to glean about other Upper Paleolithic cultures. More than fifty archaeological sites allow us to trace their habitat between Hamburg and Great Britain. As nomadic hunters, they lived on the plains and never ventured into the cave-dwelling habitat of the Magdalenian culture. Alongside the (later) Ahrensburg culture, they were the only hunters of the Upper Paleolithic who hunted exclusively reindeer. We know that they came from the east with their mobile dwellings—portable tents—but in our search for their region of origin, we have not yet been able to trace them *[using archaeological methods]* beyond the Oder River. They may have belonged to a population that always constituted the group that had advanced the farthest north *[cf. K. J. Narr, p. 509]* and that never experienced the sedentary lifestyle of the game hunters of the Moravian-Ukrainian loess groups.

2. DIET AND HUNTING IN THE EARLY PALEOLITHIC

Paleolithic humans were, at all times, beneficiaries of what the earth's surface provided them for sustenance. As far as we can tell, agriculture—and the preparatory tilling of the soil associated with it—was just as unknown to them as the domestication of animals.

Plant-based food was obtained by gathering wild grasses as well as berries and fruits of various kinds. However, these needs could only be met to varying degrees in the different climate zones. While the inhabitants of the tundra had to make do with the brief summer gathering of, for example, crowberries and obtain their main supply of vitamins and mineral salts from the rumen or intestines of birds as pre-digested plant matter, the inhabitants of southwestern Europe naturally had access to far more abundant sources, given the richer vegetation cover. We are not yet able to determine the proportion and landscape-dependent composition of the plant-based food sources of the Upper Paleolithic as clearly as we can for the animal diet. But also

this gap will eventually be filled; for with the increased use of pollen analysis—that is, the examination of cultural layers for their pollen content—we will be able to determine the composition of the respective flora, for example, in Italy, Spain, and France as well.

Such insights may prove to be of significant value. An abundance of hazelnuts, for example, in certain districts—to cite just one example—may have offered the people living there the opportunity to free themselves from the necessity of continuous winter hunting by gathering a winter supply. Such "nut-gathering areas" might also have prompted annually recurring autumn migrations or led to defense and conflict—they could be the underlying cause of the sudden shifts in population that are evident to us in the changes in cultural legacies, even though an explanation for this fact is often impossible.

Taking a general overview and considering our knowledge of similar, Arctic-influenced ethnographic phenomena, it must be clearly stated that research into the motivations that led Ice Age humans to relocate or to favor certain areas is still in its very early stages. True, we have become aware of millions of stone tools and hunting remains from the Upper Paleolithic; true, we can admire an abundance of magnificent carvings and masterpieces of wall painting [see *F. Eppel, p. 357 ff.*]; and true, we know about their migrations and their living in caves, huts, or tents. But all of this means and reveals little more than if we were to discover an abandoned Eskimo camp today and take note of what was left behind.

We can still ask the Eskimo today what motivated him to move to a new location, and he will answer that the rhythm of his life is determined by changes in his environment. That the summer appearance of certain game species compels them to seek out specific hunting grounds, that the annual breaking up of the ice makes sea hunting impossible for a certain time, and so on. However, if the Eskimo had become extinct, we would be forced to trace the respective motivations through careful observation and interpretation of what he left behind, and to evaluate them accordingly. A thorough examination of the prey bones to determine their winter or summer growth phases, the presence or absence of summer visitors—be they birds or fish migrating upstream to spawn—the seeds, and whatever other indicative factors there may be — all of this would enable us, to a certain extent, to restore to the dead material the living significance it once held in the Eskimos' environment. Similarly, our ignorance regarding the life of Early Paleolithic humans can only be bridged by making far greater use of and drawing upon the evaluable factors.

Today's research objectives are still too heavily focused on the endeavor to determine kinship relationships among the bearers of these cultures based on typological differences or similarities in artifacts, while there are hardly any attempts to uncover the motivations behind the emergence or migrations of the cultural-

bearers. The compelling reasons we have so far put forward to explain the emergence of the Upper Paleolithic in Central and Southern Europe —such as the impact of the Würm glacial cold—amount to nothing more than viewing the situation through a blurred lens; for there is no doubt that in the life of Ice Age humans, not only did the climate play a decisive role, but flora and fauna also constituted a large part of the driving force behind their nomadic existence.

Early Paleolithic humans certainly did not wander aimlessly across the land; rather, necessity, dependence, and habit aligned their will with a natural rhythm of life. A preference for a particular type of game, for example, was already linked to an unconscious dependence, and a gradual migration of that game could force people to move to areas where they had not previously lived. Our understanding of their dependence on vegetation and game species is still as limited as our knowledge of the reasons behind their varied living arrangements—in caves, huts, and tents—and their permanent settlement in mountainous and lowland regions or at different altitudes. We are still in the early stages of research in this area, and yet, for example, by compiling and analyzing the total catch of individual Upper Paleolithic groups, we might already be able to gain some regional and, accordingly, individually specific insights.

As limited as our understanding of the supply of plant-based foods still is, our knowledge of the diet consisting of game is far more comprehensive. Early Paleolithic humans hunted every type of game available, and only in the case of smaller animals—such as ermine, martens, ground squirrels, squirrels, and small birds—might one consider whether they brought them back to camp solely for their fur or feathers.

With the same boldness with which Early Paleolithic humans took on the mighty ancient elephant, the Late Glacial Homo sapiens of the Upper Paleolithic took on the mammoth, and the number of cave lions, bears, bison, horses, deer, reindeer, antelopes, ibex, roe deer, wolves, foxes, lynx, badgers, hares, as well as birds and fish, runs into the millions.

The game was eaten raw or lightly seared. Since pottery was not yet known, cooking was probably not common, unless, as in other regions, it was done by throwing heated stones in leather pouches or similar containers into the food *[cf. W. Schmidt, p. 438]*. The bones of prey animals are usually found split open, as the marrow had been extracted. The skulls, too, are generally smashed to gain access to the coveted brain.

In addition to gathering fruits that could be preserved without further preparation, Early Paleolithic people were also able to build up winter reserves consisting of their most important food source: meat.

Such hoarded winter provisions could be obtained in all climate zones through freezing or drying—whether by air-drying in the cold, low-bacteria regions of the north or by treating unsalted game with heat or smoke, as well as by storing it in high-altitude caves, similar to the modern-day preparation of "Bündnerfleisch" in Switzerland.

However, both plant-based food and winter meat reserves would have played only a modest role on the Upper Paleolithic diet; for the main source of food was certainly game, which was obtained through hunting carried out throughout the year. It was hunting, too, that occupied a dominant place in the Paleolithic man's mental world and shaped his life in a decisive way. It must therefore seem quite strange to outsiders that we are, on the whole, quite inadequately informed about this most important factor in the life of Paleolithic man—hunting. Undoubtedly, Upper Paleolithic humans had developed all skills related to hunting to a masterful level. These highly intelligent Ice Age humans would also have mastered and applied, in a methodical manner, nearly everything that ethnography can demonstrate to us regarding hunting systems *[see K. J. Narr, p. 511 ff.]*.

For a considerable portion of the hunting methods of the Upper Paleolithic, however, we will hardly ever succeed in providing absolutely conclusive evidence—both regarding the appearance of the trapping devices themselves and the characteristic damage observed on the preserved remains of the prey animals. We must consider the possible use of snares, bludgeons, and pitfall traps, as well as lassos, slings, and bolas, club-like weapons for striking or throwing, and the like. Hunting weapons of this kind do not leave characteristic, well-defined, and informative injuries on the bones of prey animals as a negative impression of the weapon's shape; similarly, such definitive traces are absent when pit traps and boomerangs are used.

Under favorable terrain conditions, the possibility of a drive hunt through narrow passes, river fords, and the like—including the game's final plunge over steep cliffs—was exploited, as evidenced by abundant finds of horse bones at the base of the Solutré cliffs in France. The estimated number of horses hunted there amounts to approximately 100,000.

In more recent times, there have been increasing efforts to provide evidence for the use of above-ground gravity traps, even for hunting large game. There is no archaeological evidence indicating the actual construction of such traps, but an attempt has been made to interpret some of the "tectiform" drawings in Magdalenian cave art accordingly. However, based on our latest findings, reinterpreting these tent-like drawings as traps rather than tents must be considered highly speculative. Now that we have been able to determine for the first time how the portable dwellings of the Upper Paleolithic were constructed, we have identified four types of Ice Age tents at the Hamburg-Ahrensburg site. They were constructed by three different population groups, and the most complex one belongs to the Late Magdalenian period. It measured a good 40 square meters and featured four, perhaps even five rooms. Such a tent cannot possibly reflect an early stage of development from the period when Ice Age humans first invented and began using tents. Rather, it is undoubtedly a highly developed type of dwelling that must have been in use for a long time in the southwestern European Magdalenian and Aurignacian periods, alongside the use of caves. The diversity of the tents from Ahrensburg convinces us that dozens of tent types were in use during the Upper Paleolithic, and that the majority of the tectiform drawings should indeed be regarded as depictions of tents with one or more entrances.

However, in the Upper Paleolithic, drive hunting played a far greater role in the capture of game than hunting with snares and traps. Thus, we also have thousands of weapon points made of bone, antler, and stone, which undoubtedly served to reinforce offensive weapons. It is striking that, with one exception, not a single example of these many thousands of projectile points for throwing spears, thrusting spears, sling bolts, and bow arrows has ever been found with a shaft attached. This fact, which so severely limits our knowledge of Paleolithic hunting, is explained by the easy decay of wooden shafts. What is inexplicable—indeed, downright incomprehensible—is that no negative impressions in the form of bullet holes have been discovered from any of these weapons, which would allow us to determine, based on their dimensions, which weapons were used in each hunt from the same cultural layer.

It must seem incredible that the 25 bullet holes in the Ren's shoulder blades and vertebrae—caused by bow arrows and barbed harpoons—caused by bow arrows and barbed harpoons—including three embedded flint arrowheads and additional bullet holes in bird bones—are not to be considered, alongside the millions of bones from prey animals of the Upper Paleolithic, as further evidence of this kind that would enable us to explain and illustrate the hunting methods of Ice Age humans in greater detail than has been possible to date. Should there not be, in those cultures that do not have

stemmed or notched stone arrowheads, might there not also be bone perforations that allow us to identify some of the Châtelperon, Gravette, Font-Yves, or Kremser points as arrowhead attachments?

If we are able today to speak of the knowledge and use of long-range bows in the Upper Paleolithic as a matter of course, we owe this knowledge to a fortunate coincidence. For decades, we could rely only on conjecture, based primarily on arrow-like depictions in rock art and on bone and stone points that appeared to be arrowheads. A few years ago, near Ahrensburg, in addition to the aforementioned arrow holes and impact marks, 100 wooden arrows and two pieces of a pinewood bow were discovered, which had been preserved under ideal conditions in lake sediment from the Late Paleolithic through to the present day. From the fact that these 100 arrows—up to 85 cm long and made from split wood—can be classified into three types, it can be generally inferred that the bow and arrow had long been known to Upper Paleolithic humans and was used by the entire Upper Paleolithic Homo-sapiens population and, furthermore, as we believe, even by the Riss-Warm interglacial representatives of this branch of humanity.

Not all of the Upper Paleolithic people's hunting weapons were fitted with tips harder than the wood of the shaft. Rather, we have clear evidence of the use of arrows made entirely of wood. For example, 25% of the Ahrensburg arrows were of the simply pointed type, and to dispel any doubt about the effectiveness of such simple pinewood weapons, the excavators were fortunate enough to discover, in the same cultural layer, the skeleton of a young wolf in which one vertebra was shattered and the adjacent one damaged, while the spinal canal of the third vertebra contained the broken tip of one such simple wooden arrow, which, shot at the animal from behind, had caused the injuries described and thus made the hunting of the wolf possible.

The use of wooden lances and spears must also be considered. The highly interesting discovery of a wooden spear from the Middle Paleolithic at Lehringen *[see H. Breuil, p. 270]* is not only of great value in general terms, but it also gives us an idea of the weaponry used by Early Paleolithic people and, above all, provides insight into the hunting techniques employed

such primitive tools. The consumption of elephant meat, in fact, also played a significant role among some Upper Paleolithic populations, particularly among the loess-dwelling mammoth hunters of eastern Central and Eastern Europe.

These are open-air sites stretching from Moravia to beyond the Caspian Sea, which stand out particularly because they contain large accumulations of mammoth bones—often sorted by human hands and found stacked in large piles as tusks, pelvic bones, skulls, long bones, or the like. These accumulations of bones in human settlements gave rise to a wide variety of interpretations, and the resulting differences of opinion ranged between two extremes—namely, the assumption that these were regular hunting spoils, and the view that humans at that time were not yet capable of capturing such massive game in open pursuit and, furthermore, were unable to drag the heavy limbs back to their campsite. The latter view led to the assumption that these must have been herds of mammoths that were wiped out on the spot by set fires or natural fires, or by snow or loess storms, and that this provided the opportunity for humans to set up camp amid the carcasses and subsist on them. This hypothesis, which amounts to a preference for scavenging, cannot be accepted for the following reasons. The local presence of more than 100,000 stone artifacts indicates not a brief but a very long stay at these campsites. Several superimposed cultural layers, each containing numerous mammoth bones, cannot possibly be interpreted as multiple, locally recurring catastrophic wipeouts of mammoth herds. Above all, however, such reasoning reflects an extraordinary underestimation of the capabilities of Ice Age Homo sapiens. From the moment in their evolution when suitable hunting weapons became available to them, humans have attacked and captured everything the earth bore, and it might not have taken the speared elephant from Lehringen to gain certainty that it was precisely the large pachyderms—such as ancient elephants and rhinoceroses—or the mighty cave bear that fell to their weapons; for the shattered bones of such large mammals are found in nearly all cultural layers of the Upper and Middle Paleolithic.

Humans were quite familiar with the habits and vulnerabilities of large game, and their hunting skills were masterful thanks to experience passed down through the ages; the needle-sharp wooden or bone point could offer no sufficient resistance to either the mammoth's fur or its skin. Even the skin of today's hairless elephant is calloused and hard only in areas subject to friction, while the remaining skin surfaces can be lacerated by a single lash of a whip.

The notion that Early Paleolithic humans were incapable of transporting large parts of a mammoth's body—such as the head or pelvic region—to their campsite stems from an incomprehensible underestimation of their intellectual agility and technical skill

of these Ice Age masters of survival. We would simply like to add on this subject that, as numerous examples prove, such parts of the prey were often hauled up into caves that could only be reached via steep slopes.

Finally, let us turn to the hunting of small game. Foxes, hares, and small fur-bearing animals were likely hunted primarily with bows. We have only two definitive pieces of evidence regarding bird hunting, both from the mud of Ahrensburg, where the sternum of a crane bears four arrowshot holes and the pelvis of a ptarmigan shows a single circular entry wound.

No artifacts exist to document fishing methods. The oldest known fish traps to date come from Denmark, where they were recovered from post-glacial Mesolithic layers dating back approximately 8,000 years *[see J. G. D. Clark, p. 331]*. Nor has any evidence been found to date for hunting with fishing rods or nets, although various tools have been interpreted as fishhooks. But even for spearfishing—which was undoubtedly practiced—we still lack clear evidence. In the context of this fishing method, the single- or double-row barbed harpoon may have played a major role. However, as the artifacts from Ahrensburg discussed above clearly demonstrate, the harpoon—which, with its three-part design (throwing stick, shaft, and detachable tip), is regarded as the most sophisticated weapon-related invention of the Upper Paleolithic—was used not only for hunting in water but also for capturing large game, such as the roe deer.

It is impossible to determine what proportion of the Upper Paleolithic people's food supply came from aquatic hunting. Fish bones and vertebrae—along with snail shells—are found in many cultural layers, and there is no shortage of depictions of such animals in the visual arts. Undoubtedly, however, fishing at that time was far from having the same significance as it did in the Mesolithic. One might therefore assume that fishing was not practiced regularly throughout the year, but primarily only during the major spawning migrations.

The Upper Paleolithic human, as can be inferred from finds and indirect evidence, was a hunter, and we may view him as a person whose intellectual abilities, coupled with the instincts of a creature living in harmony with nature, and whose experience passed down through generations enabled him to fully master his environment. Using tried-and-true weapons with points made of ivory, bone, antler, horn, wood, or stone, he primarily engaged in

the drive hunt. When his long-range projectiles—shot from a bow, hurled from a throwing stick, or thrown by hand—failed to hit their mark, he would close in on large game with lances and spears, engaging it in close combat as a masterful hunter. The Upper Paleolithic hunter was no conservationist. Although, as we shall see, he sacrificed captured female animals to a deity, he felt no concern for the future of the game population while hunting; rather, he took newborns just as readily as adult animals.

3. CLOTHING AND JEWELRY IN THE EARLY PALEOLITHIC

Neither material remains nor artistic drawings provide evidence of the type of clothing worn by Early Paleolithic people. Given our knowledge of these people's cultural and artistic achievements, however, the assumption that they simply draped furs over themselves or wore a simple loincloth is completely absurd. Even if the needle-pointed awls, polished to a smooth finish by women's hands, awls, and the like are often overlooked, any woman today who were given one of the ancient, delicate bone sewing needles with an eye would immediately sense that her Ice Age predecessors must have been masterful seamstresses who crafted beautiful, practical, and well-fitting custom-made clothing for their families.

The shoes, pants, jackets, and hoods of today's circumpolar hunters *[cf. K. J. Narr, p. 514]* should give us a rough idea of the clothing worn by Ice Age hunters; for climate, environment, and tasks always dictate a similar practical form of clothing, the basic features of which remain preserved even when fashion trends alter the cut.

Early Paleolithic people certainly did not limit their artistic expression to decorating tools and creating pictorial representations, but would also have applied it to their clothing. It is left to the imagination to what extent the Ice Age seamstress adorned the hides and assembled them into garments. For her work, she had at her disposal hides from large game and fine furs in shades of white, gray, brown, red, blue, and black. The hides were soft-tanned using brain matter, urine, and substances with similar effects. In addition, strips of leather or bird skins tinted with plant- or mineral-based dyes, as well as feathers, would have given Ice Age women the opportunity—in addition to a conceivable

body painting—to give their clothing and tools that colorful appearance that corresponds to a sensibility still reflected for us today in the splendor of the wall paintings.

Since no concrete evidence of weaving or braiding has yet come to light, we must assume for the time being that the stylish caps, headbands, or hats were also made of leather or furs, with their trimmings of colorful shells—as found in Grimaldi—still attached in their original arrangement to the skulls of the interred.

Jewelry as adornment—and the wearing of jewelry in general—played a significant role in the Upper Paleolithic. Materials used included ivory, amber, minerals, shells, snails, bone, antler, wood, charcoal, fossils, fired clay, animal teeth, horn, and others. The materials were usually pierced and worn in the form of beads, pendants, as embellishments, as necklaces or limb chains, as collars, or as amulets. Some magnificently decorated objects—such as those found with great frequency, particularly in France, the stronghold of art—do not reveal whether they were utilitarian items or objects of art or worship, whose intricate ornamental or naturalistic decorations—think of ivory or light-colored bone—may have been filled with red or black pigment, resin, or pitch. Frequent finds of ochre fragments and abundant ochre residues in burials suggest that the body was painted *[see K. J. Narr, p. 513]*. Adornment, in all its forms, certainly played a major role in the lives of the art- and color-loving Upper Paleolithic people of Europe.

4. ART, RELIGION, AND BURIAL IN THE EARLY PALEOLITHIC

The field of study and research on Ice Age art is vast and diverse, and a special chapter is devoted to it in this work *[see F. Eppel, p. 356 ff.]*. Every visitor who has had the good fortune to view the masterpieces of the Upper Paleolithic artists in the caves of France and Spain will have stood in awe and admiration before these ingenious creations, which were produced tens of thousands of years ago by Ice Age Homo sapiens—the great masters of a long-gone era of human history. These works of great mural art and all those created within the realm of small-scale art

are now so abundant that they can only be presented in a summary overview.

However, this numerical proliferation of artworks—which in itself is so gratifying—seems, to an ever-greater extent, to obscure the possibility of answering the core question: the question of the meaning of Ice Age art, the question of "why." This is all the more so because there is a fluid transition from purely naturalistic representations to those that appear to be limited to simple abstract-ornamental thinking. One might ask: Which depictions were created for religious rituals or for hunting and fertility rites? What significance should be attributed to the well-known small carved female sculptures found from the Pyrenees all the way to Siberia? Were they idols of a female deity or symbols of fertility or eroticism? What significance might, for example, have been attached to the Solutrean animal frieze at Le Roc, where a series of magnificent animal figures were arranged in a semicircle, carved as bas-reliefs into limestone blocks? Was it a place of worship or an artist's studio?

In recent years, we have also become aware of artifacts that bear witness to a strong connection between Early Paleolithic humans and a religious worldview. These insights came to light outside the cave regions, specifically in the morainic lowlands of Northern Europe, where the silt of silted-up ponds often forms a preservation sediment of the highest quality. This mud—known as "gyttja"—which is impermeable to circulating groundwater, has already enabled researchers to make numerous contributions toward filling in the picture of Early Paleolithic life, and much more could be expected if the Eastern European lowland regions were investigated more thoroughly in this regard.

Near Hamburg, at the site of Ahrensburg, entire skeletons of young reindeer were found in the Gyttja layers of the Early Paleolithic Hamburg and Ahrensburg cultures; in their rib cages lay one large stone or several smaller ones, each weighing 8–10 kg. Fifteen of these reindeer—which were not domesticated but, as evidenced by pierced shoulder blades and wooden arrows embedded in the ribcage, had been hunted in the wild—were found, and 15 additional ones, whose skeletal parts were somewhat distorted, were identified.

A total of 30 reindeer were submerged at three different sites there, and the investigation has shown that in all cases these were two-year-old females. Based on various comparisons and the wealth of findings derived from the 30,000 reindeer thrown into the pond

bones, antlers, tools, weapons, and works of art, it was possible to conclude that these finds represent the contents of sacrificial ponds and that the 30 young animals that were submerged were offerings.

Furthermore, a 2.15-meter-long, 12-centimeter-thick stake was found in the Ahrensburg cultural layer, which had once been erected in the water along the shore. A reindeer skull was mounted on this stake, and this skull, in turn, has its own story. It is, in fact, the head of the oldest animal that could be identified among the 1,000 reindeer found there. It is the skull of a 16-year-old female reindeer, and this fact provides us with clear evidence that the erection of the stake was not for secular purposes but was rooted in cultic-religious practices. As is well known, reindeer are the only species in which females also bear antlers. However, the antlers of female reindeer are always significantly less developed than those of the males. Furthermore, the antlers of older animals—those over about ten years of age—are reduced in size. This implies, with regard to our find, that the skull on the stake exhibited only a meager set of antlers, which by no means served the purpose of displaying a colossal hunting trophy, such as the magnificent specimens measuring over 1.5 m in antler length that were frequently found in the same stratum. The erection of the so-called "cult post" must therefore have been linked to similar religiously grounded concepts as those associated with the sacrificial animals [see K. J. Narr, p. 519 ff.].

In summarizing the findings, the local circumstances point to the certainty of religious customs and thus to a belief in the existence of higher beings capable of influencing the fate of humans and animals—that is, in the existence of gods or a deity.

It goes without saying that such notions must also have given rise to thoughts about the dwelling place of the gods. Since almost all ancient religions conceived of the realm of the gods—the realm of the dead or the eternal hunting grounds—as earthbound, one may ask whether we can or should draw conclusions from the local conditions regarding how these Northern Upper Paleolithic people imagined access to the underworld. Perhaps the Ice Age hunter, living in the cave-free lowlands, saw the path for the souls of the deceased in the depressions of the earth's surface, which he was unable to fathom. Such notions—which we may still hear echoing in fairy tales of unfathomable lakes, of access to another world through well shafts, and so on—may have shaped religious customs not only among the North-West German river hunters but also among other cultural groups in the vast moraine and loess regions of cave-free Eastern Europe.

How very different, however, were the environmental conditions in the cave regions, and how they steered the inhabitants' trains of thought in a different direction! In the caves,

they indeed had before their eyes entrances to an unexplored and dark underworld, and these entrances may have exerted a similarly wondrous attraction as the ponds did on the lowland hunters. Even if the rationale for such hypotheses may be regarded as weak, it may nevertheless contribute to reinforcing the generally held view that the majority of Upper Paleolithic cave art was conceived and executed within the framework of the religious worldview of our Ice Age ancestors.

If we attempt to go beyond such a general statement and find a more objective justification in detail, the question of whether these are talismanic images of hunting magic or pictorial representations of animals that—forgoing the game —were actually sacrificed at the cave entrances, paintings that played a role in coming-of-age rites, or even those created by shamanic artists and presented to the awestruck viewer. Imagination and research still face distant goals in interpreting Ice Age religion and art—yet we have barely begun to explore the outer reaches. The Upper Paleolithic people in the cave regions would also have had their own sacrificial sites, where perhaps thousands of bones and antlers were laid out in the open air—sites we have not yet identified. We may already have individual offerings in our possession—but who can determine whether an animal carcass or head buried next to a dwelling in the Upper Paleolithic period in the vast eastern loess regions was in fact an offering?

Further indisputable evidence of the religiously tinged worldview of Early Paleolithic people is provided by the reverent burial of the deceased. These burials have come to be known to us as full-body or head burials. The concern for the repose of the dead and the indication of a belief in an afterlife are evident in the sometimes meticulous shielding of the deceased by box-like slabs arranged on the sides, upon which protective cover stones, mammoth shoulder blades, and the like were also placed to shield the head or torso, as well as in the inclusion of tools and food as provisions for the journey.

To date, our knowledge of art and religious cults has been derived solely from the European and North Asian cultural spheres of the Upper Paleolithic. Whether, in what manner, and to what extent evidence in this regard might one day shed light on the spiritual life of Upper Paleolithic peoples in the Near East—an area not reached by the advance of the typical Aurignacian—on the

the Arabian Land Bridge and in Lower Egypt, cannot yet be assessed, as there is still a complete lack of substantial evidence of this kind in those regions.

5. LIFESTYLE AND DWELLINGS IN THE LATE PALEOLITHIC

Today we know more about the way Late Paleolithic people lived than we do about their hunting and religious practices. Countless caves inhabited by humans have been discovered to date, and the number of those that have not yet been explored may be just as large.

Early Paleolithic humans, too, made a point of taking advantage of the opportunity to live in caves, and so, starting in Spain and extending across the entire mountainous southern part of Europe, we find evidence of cave settlements that reach as far as Arabia and attest to the presence of Ice Age Homo sapiens. Apart from caves in cold, shaded locations, caves at sea level were just as popular as others that offered shelter at elevations of up to 2,000 meters. People usually lived at the entrance to these natural shelters, less frequently further inside, likely depending on the season. Places under overhanging rock roofs were also frequently sought out. The entrances to the caves or niches were protected by dry stone walls or screens of shrubs. Now that we have learned about Ice Age tent construction, it may be possible to demonstrate, based on the semicircular arrangement of weighting stones, that these entrances were also covered by semi-tents. At some sites in France and Germany, the open-air forecourt was paved in terraces with stone slabs over a large area. Such dwelling caves, however, are of no significance as a reflection of the intellectual vitality of Upper Paleolithic humans, for they are natural formations into which one merely had to move. However, the full extent of what Ice Age Homo sapiens was capable of achieving in the field of housing construction only becomes clear to us through the artificial dwellings built in areas lacking caves.

It goes without saying that when Early Paleolithic humans sought to explore hunting grounds where natural caves were absent, they were compelled to construct dwellings—at least for winter habitation. The challenges involved were masterfully overcome through the construction of huts or hut-houses and the fabrication of tents.

The use of permanent or portable shelters usually indicates, even from the outside, whether the inhabitants were hunters of sedentary game or those who pursued migratory game. A corresponding analysis of the captured fauna generally confirms this view.

In recent years, it has been noted with increasing astonishment that there are mounting examples showing that Ice Age hunters were also excellent builders. Those hunting tribes that wished to inhabit the vast, exposed loess regions of Central Europe and Russia —where the continental climate and environmental conditions placed greater demands on shelter—were compelled to achieve a high level of mastery in house construction as well. One can only acknowledge the technical achievements they attained with the same admiration as that accorded to the great cave art developed by a population group that lived under far more favorable conditions in the mild, maritime, and cave-rich region of southwestern Europe.

The structures in question consist of houses of varying sizes that were built in pits dug 0.5 m to 3 m deep into the loess, so that the roofs, covered with grass or animal hides, rested on a low wall or directly on the ground. Such houses have been found with widths of several meters and lengths of up to 40 m, for example at the Russian mammoth-hunting sites of Kostjonki, Puškari, Timonowka, and other locations. Let us step inside such a house, just as it was when it was inhabited. A covered entrance, dug at an angle into the loess, leads—after opening a door or a fur curtain—into a large room taller than a man. A wood fire burns in the hearth, and in the flickering glow of the flames we can see that the walls consist of split wood—one might almost say paneling—and that even the floor is made of wood. Through the curtained opening in a transverse wall, we enter an adjoining room, which also has a hearth, and from there into a third room, which serves as an unheated storage area. These are the living quarters of an Ice Age hunter-gatherer family. In addition, there are elongated dwellings with a whole series of hearths, which certainly provided space for several small families. Houses of this type were built in climatic zones where tall trees thrived—that is, in areas located south of the frost-tundra belt.

Unless we wish to view such large, permanent dwellings as the winter quarters of hunting tribes that, in the summer, live in individual

groups or in families on long hunting expeditions northward in pursuit of migrating reindeer, we must therefore regard these as the dwellings of hunters of sedentary game. The fauna found at the site consists of mammoths, rhinoceroses, bison, horses, occasional reindeer (forest reindeer?), and other animals that, strictly speaking, are not Arctic in origin; thus, taken as a whole, it attests to the yields from hunting sedentary game.

Also of great interest are the recently discovered remains of above-ground huts, 4 to 7 meters in size, which were built in Eastern Siberia near Buret by Ice Age humans or by hunters whose way of life was still at the Upper Paleolithic level. The framework of the huts was constructed from wood or large mammoth bones, similar to the Eskimos' use of whale bones. Numerous reindeer antlers were tied to this framework; with their protruding prongs and branches, they provided excellent support for a roof covering of brushwood, sod, or moss that was laid on top and interlocked. Both the houses and the huts suggest that, thanks to a possibly mixed game population, the builders were able to sustain themselves locally for extended periods or year-round on the proceeds of the hunt.

In recent years, however, we have also become aware of dwellings that attest to a different way of life among their builders. These are the first indications that Ice Age humans had already constructed and used a portable shelter—namely, the tent. The tent, as an expression of its owner's nomadic way of life, points to the hunting of game that was highly mobile and migratory, not remaining in the same territory year-round. We can thus regard the tent as the typical dwelling of a population that hunted the reindeer—the most mobile game in terms of its habits—north of the taiga-like forest regions in the tundra belt.

In this initial examination of Ice Age tent construction, it is particularly interesting to note that three distinct basic types have been identified; for this indicates a differentiation of the tent—which in its original form may have been round—into specialized types among the various cultural groups. This evidence must lead to the conclusion that the tent was in use long before the Upper Paleolithic, and it thus provides a basis for the belief that, in the future, we will succeed in identifying a larger number of specific tent types among the various Ice Age cultural groups. The size of the discovered transport-

dwellings found compels us to assume that sled-like vehicles were used for transport, which the intelligent Upper Paleolithic people were, of course, capable of inventing.

The two oldest of the tents mentioned belong to the Hamburg Phase. One of these is a double tent, in which an oval, enclosed inner or living tent measuring 2.5 × 3.5 m was surrounded by a horseshoe-shaped protective or outer tent that was open at the front and 5.5 m wide. The fur walls of the inner tent were weighted down with large stones weighing up to over 50 kg; those of the outer tent were possibly weighted down by mounded earth. In front of the tent, a 1-meter-wide, trough-shaped hearth and a work area with stone anvils were found, between which 5,000 artifacts were scattered. On two sides of the structure, there were two anchoring stones each for the guy ropes; a fifth was located in front of the tent.

The second structure had no inner tent, and the walls of the 5-meter-wide, open-fronted, and likewise horseshoe-shaped tent had been reinforced with mounded earth excavated from three pits behind the tent, each 0.75 meters deep. The lateral anchor stones were each supplemented by a third stone; the arrangement of the hearth, the work area, and the large front anchor stone corresponded to the conditions described above.

As a third type, one tent preserved in plan and two heavily damaged tents were identified for the Ahrensburg cultural groups; these were 2 and 3 m wide and had an approximately circular shape, and may be interpreted as simple hunting tents.

While the five summer tents mentioned were used by people whose cultural tradition traces back to Eastern European Upper Paleolithic groups, the sixth large winter tent belongs to the bearers of the Magdalenian cultural tradition who migrated from southwestern Europe. The structure, measuring over 40 square meters, was divided into four or five rooms. The living tent stood on a massive stone platform and was shaped like a keyhole. It measured 4×7 meters and contained a 1.2-meter-wide hearth. From here, a connecting chamber led to the 4-meter-wide circular storage tent. The living tent was fully paved, the connecting chamber partially paved, while a narrow side room attached to the living tent and the storage tent had no flooring at all. While in the first five tents mentioned, the hearths and the numerous artifacts were located in front of the dwelling, in the Magdalenian tent the 1,000 artifacts were found only inside the living area, where people gathered around the hearth during the winter.

The shape of the tents likely stemmed from the respective practical requirements

. For the builders of the Magdalenian tent, who had formerly lived in caves, the subconscious idea of recreating the ideal cave dwelling—which featured a narrow entrance, easy to close and defend, and a spacious living area—may also have played a certain role.

The houses, huts, and tents built by Early Paleolithic people reflect their intellectual prowess to a great extent, and at the same time bear witness to the tools—developed through systematic thinking—that enabled Ice Age humans to explore hunting grounds characterized by unfavorable climatic conditions and which, moreover, offered no possibility of finding shelter in a natural cave.

6. THE RECLAIMING OF THE NORTHERN REGIONS DURING THE EARLY PALEOLITHIC

During the advance of the Würm glaciation and even during its peak, some Upper Paleolithic populations remained close to the ice with remarkable perseverance, without taking advantage of the opportunity to migrate to more southerly regions. It was the members of these population groups—who had likely always been the farthest north—who were the first to follow the retreating ice and reclaim their old hunting grounds. Unfortunately, for the time being we can clearly observe this earliest phase of reconquest only in the western tip of the tundra belt near the ice margin in northwestern Germany; however, similar processes—linked to the use of mobile dwellings—are likely to have taken place further east in northern Russia as well.

The earliest settlement of the Northern European Würm moraines, as well as the old moraine areas immediately adjacent to them, took place at a time when, following the Würm glaciation, the permafrost —which had been frozen to a depth of several dozen meters for millennia—began to thaw under the influence of the now steadily improving climate. This process of slow thawing began in the southernmost parts of the Würm moraines near Hamburg around 15,000 years ago, shortly before the first appearance of the Hamburg River Hunters—who are chronologically equivalent to the Magdalenian culture— and ended in this region about 9,500 years ago, when the glacial manifestations of climate, flora, and fauna gave way to postglacial ones. This went hand in hand with the cultural transition from Paleolithic to Mesolithic ways of life. Before Homo sapiens, as in the Russian example mentioned above, established larger settlements—

and permanently settled the Würm moraine regions, hunting had already taken place there for millennia, as long as a year-round—that is, permanent—food supply was lacking. This earliest use took the form of large hunting expeditions, the duration of which was determined by the length of the brief summer-like temperatures.

The first group to enter the young moraines were the people of the Hamburg culture, who migrated from the east. Analysis of the growth stages of animal bones has shown that these specialized reindeer hunters, with their tents, hunted in the region for only about three months at a time. In the fall, they migrated to milder climates following the reindeer, specifically to the area of what is now the southern North Sea, which at that time was still dry land extending as far as Dogger Bank. To date, we know of about 50 campsites in northwestern Germany, the Netherlands, and England belonging to these Early Paleolithic people, whose artifact typology is completely isolated; however, none of these has yet been identified as a winter camp. Whether these Early Paleolithic people later moved northward as the ice advanced, were assimilated by other population groups, or became extinct has not yet been determined.

Our first knowledge of the next younger northern group—the Bromme culture, which was also oriented toward the east—dates to the Alleröd warming phase, estimated to have occurred 11,000 years ago. The Bromme group has so far been documented only in Denmark, where it has been little studied from a cultural-historical perspective.

During the Younger Dryas period following the Alleröd, a period of cooling, the bearers of the Ahrensburg phase appeared on the Würm moraines of northern Germany. They likely also migrated from the east about 10,000 years ago. They, too, were highly specialized reindeer hunters who remained in the region only during the short—though by then somewhat warmer—summers, traveling in winter to the hunting grounds of eastern Hanover, Westphalia, or the North Sea region.

While the Hamburg hunters used small sacrificial ponds only once for each sacrifice, the Ahrensburgers, during repeated visits to a still-unexhausted summer sacrificial pond, deposited more than 20,000 bones and over 1,000 roe deer antler poles alongside 30 roe deer sacrificial animals and numerous tools and weapons.

Into these peripheral areas of the Würm moraines—inhabited for millennia by free-roaming, nomadic roe deer hunters of the Eastern tradition—advances by such hunter groups from the south took place during periods of favorable climate; these groups generally adopted a somewhat more sedentary way of life

. The first incursion occurred during the brief Alleröd warming fluctuation, and this advance was presumably carried out at a time when, in some districts of France, settlement by the Magdalenian people—evidenced by a sudden interruption in the cultural layers of the cave sediments—appears to have ceased. It was also the bearers of a late Magdalenian culture who advanced in several groups distinguishable by artifact typology, originating from Great Britain, Belgium, the Netherlands, and central Germany, respectively.

The large winter tent described above also belongs to one such advancing group, and it appears that an initial advance of the temperate fauna took place during the Alleröd period, so that humans were able to live temporarily even in winter at that time in the aforementioned regions at the latitude of Hamburg. With the end of the Alleröd period, the bearers of this Late Magdalenian culture appear to have retreated to the northern edge of the German low mountain ranges and as far as the Netherlands. During the subsequent cold snap of the Younger Dryas period, the exclusive river hunters of the Ahrensburg group once again dominated the young moraines as new immigrants from the east.

With the renewed warming approximately 9,000 years ago, the various groups of the Late or Post-Magdalenian period advanced northward once more and permanently, resulting in a partial intermingling with the hunters of the late Bromme (Lyngby) and Ahrensburg groups, as evidenced by the mixed character of the flint tool industries. Accompanied by the temperate fauna and flora, these descendants of the Magdalenian culture gradually advanced northward once more into the inhabited areas of their ancestors, now clad in the transformed cultural garb of the Mesolithic era that had just begun. Whether they were preceded by remnants of the highly specialized reindeer-hunting groups, who still maintained their Paleolithic way of life at that time, has not yet been determined. It is also not yet clear how far south the pull of the northern vacuum extended, and it is conceivable that groups of hunters advanced in stages as far as France, continuing well into the Mesolithic period.

THE MIDDLE STONE AGE

BY J. G. D. CLARK

1. GENERAL CHARACTERISTICS

The way of life and many important cultural elements that prevailed across vast regions of the Old World when these areas were first reached by agricultural societies and Neolithic technologies ultimately trace their origins back to Paleolithic roots. Nevertheless, prehistorians have deemed it appropriate to refer to the hunter-fisher cultures of this period as the “Mesolithic” or “Middle Stone Age,” thereby emphasizing their distinctive status. The duration of this period varies greatly, depending on the proximity or distance of the region in question from the centers of agricultural cultures. The beginning of the Mesolithic is defined by the transition from the Pleistocene, or Ice Age, to the Holocene, or the geological present (around 8000 BCE). This phase led to the geographical, climatic, and ecological conditions of the historical era and, at the same time, not only served as the driving force behind the relocations and migrations of the surviving hunter-fisher cultures but also created the conditions under which certain, advantaged groups of people made the discoveries that became fundamental to the practice of agriculture. They set in motion the historical process that displaced Mesolithic humans by Neolithic and metal-using cultures.

The ecological upheavals at the end of the Pleistocene had very different effects on human ways of life in different regions. In North Africa and parts of Western Asia, where a pluvial period was succeeded by a fluctuating but generally arid climate, living conditions deteriorated for communities that were entirely dependent on hunting, fishing, bird trapping, and gathering. In contrast, in areas exposed to the peripheral effects of glaciation—such as a large part of today’s temperate zone in Europe during the Late Pleistocene—this change took the form of a more favorable climate, more lush vegetation, and, in general, better conditions for the hunter-fisher populations. Certain areas, such as the Scandinavian Peninsula north of the Fennoscandian terminal moraines, were freed from the retreating ice sheets during the postglacial period and thus became accessible to human settlement. The Geographical Transformations

during the Late Glacial and Early Postglacial periods are of immense significance for the expansion of human settlement, not least for the settlement of the New World.

Relatively little is known about the ecological history of the ice-free lands. Much more is known about environmental changes during the early postglacial period in periglacial and glaciated areas, particularly in Central, Northern, and Northwestern Europe. Across a broad band stretching from the Pyrenees and the Alps to the British Isles and Scandinavia, forests expanded widely in response to more favorable climatic conditions. Initially, during the Preboreal, the forest encroached only to a relatively limited extent on the open tundra and parkland tundra, and only cold-tolerant trees—birch and pine—advanced. As temperatures then rose more rapidly during the Boreal, the forests became denser, and heat-loving trees such as oak, elm, linden, and alder began to appear. Finally, during the Atlantic Period, when temperatures rose to a postglacial maximum higher than today's, mixed oak forests dominated the landscape. The extensive forest had now encircled the Mesolithic hunter-fisher groups.

The economic system and cultural heritage of Mesolithic humans were Paleolithic in nature, and where "local developments" occur, they can be explained by the superimposition of migratory waves, adaptation to the changing environment, and, in certain cases, contact with groups whose economies were based, to a greater or lesser extent, on agriculture. The most striking feature of the archaeological material is the widespread occurrence of microliths. The forms of these small flint tools and their manufacturing technique—in which the bases and, in some cases, the tips of small blades were chipped off, yielding the typical byproduct known as a micro-chisel—begin to appear as early as the Upper Paleolithic layers of the Mediterranean region at sites such as Parpalló in eastern Spain and Romanelli in southern Italy. Nevertheless, there is no doubt that during the Mesolithic, microlithic industries became far more widespread than ever before, extending across large parts of Europe, Asia, and North Africa. This expansion was partly driven by population movements. It is certain, for example, that migration took place between the Iberian Peninsula and North Africa, although the direction of this movement remains uncertain. In contrast, the extensive occurrence of microliths at this particular point of contact may indicate the emergence of a new type of weaponry [see p. 327 ff.], which was partly driven by concurrent environmental changes. The microlithic development of the Fire-

stone tools did not occur only in the Upper Paleolithic—and particularly in the blade and burin industries belonging to the Gravettian tradition—but also in Epi-Levalloisian groups, such as the Egyptian Sébilien.

Since we generally know very little about tools made of organic materials, settlement patterns, etc., in cultures with a microlithic industry, and a sufficiently precise chronology is still lacking, it is risky to determine their genetic relationships. Among the few exceptions is the Azilian, a culture named after the classic site of Mas d'Azil in Ariège, where its remains were first discovered in a stratigraphic position between layers of the Late Magdalenian and the Neolithic. There can be little doubt that this Azilian culture has its roots in the Late Magdalenian. Based on the characteristic form of the flat harpoon heads made of stag antler—which are usually serrated on both sides and pierced at the base—its distribution almost entirely coincides with that of the Magdalenian. It is found, for example, in Spain north of the Cantabrian Mountains, in southwestern France, and around the western and northern foothills of the Alps. In France and Spain, the two cultures usually overlap under the same rock shelter. At some Spanish sites, layers have even been identified whose tool types are thought to show a gradual evolution toward Mesolithic forms. Although they inhabited the same area as the Magdalenian people, the Azilian people lived in an environment altered by the expansion of the forest and hunted red deer and wild boar instead of reindeer, bison, or other game species characteristic of more open landscapes. Their way of life—and consequently the forms of their material culture—were adapted to a fully postglacial environment.

Although the Azilian people produced microlithic points of simple form, their technique *[cf. p. 321]* was quite different from the craftsmanship of the Mediterranean region, which was characterized by Gravettian or Epi-Gravettian styles, where the notching and micro-burin techniques had been practiced since the Upper Paleolithic. In contrast, the use of this technique was one of the striking characteristics of Mesolithic groups throughout almost the entire temperate zone of Europe, extending as far north as Great Britain—but not as far as Ireland—and the western Baltic states, and eastward across Poland into southern Russia.

Many prehistorians are inclined to attribute the similarity in technique and tool forms to a northward migration of people from the Mediterranean

regions *[derived from a Capsia root: cf. H. Vallois, p. 106]*; others, however, given the wide distribution of the Gravettian *[cf. A. Rust, pp. 293 ff.]*, consider the possibility that such convergences occurred multiple times due to coinciding ecological upheavals.

Although too little is yet known about the microlithic industries of Mesolithic Europe to provide a basis for a valid classification, one thing already seems clear: A distinction can be made between relatively narrow-bladed geometric industries—characterized by blunted spines and triangular shapes and discovered by French researchers at Sauveterre-la-Lemance—and those first identified at La Fère-en-Tardenois (northern France). The latter are characterized by a distinctive shape of triangular points—often distinguished by a concave base—and consistently asymmetrically shaped trapezoids. The Sauveterrian was overlaid by the Tardenoisian and, for its part, appears to be at least younger than the heyday of the Azilian. Nor is there much reason to doubt that the Tardenoisian, at least in its final stages, was influenced by direct contact with communities that relied to a greater or lesser extent on agriculture.

The Mesolithic inhabitants of that part of Europe lying beyond the outermost boundary of the Pleistocene glaciation seem to have produced only a few industrial innovations. The most remarkable feature of the archaeological record is—as we have already emphasized—the extremely widespread occurrence of the micro-burin technique, which was developed in the Mediterranean region as early as the Upper Paleolithic period. In the northern European plains stretching from eastern England to Russia—which were almost entirely covered by ice at some point during the Pleistocene—the postglacial period is characterized above all by the emergence of a new, distinct culture known as Maglemosean, named after the Maglemose site on Zealand. This culture combined large-scale tools with microlithic elements. It also included a greater number of tools and weapons made of bone, antler, and horn than those found in the Sauveterrien and Tardenoisian cultures. Although the typical sites of classical Maglemose culture in Denmark, northern Germany, and southern Sweden must be attributed to the Boreal period, new discoveries at Klosterlund (Jutland), Pinneberg (Holstein), and Star Carr (Yorkshire) indicate that this culture had already begun to take shape during the Pre-Boreal period. The appearance of their flint axes and transverse axes in these northern regions likely coincides with the onset of the postglacial forest period.

The Maglemose culture, in its characteristic form, appears to have extended from eastern England and northeastern France to southern Sweden and Estonia. However, the characteristic stone types are already absent in Estonia. Instead, there is a mixture of foreign-looking bone tool forms with those typical of the northwestern variant of the Maglemose culture. Further east, this distinct form of the Maglemosians extends as far as the Urals, beyond the Siberian Baikal region, and even into North America. Throughout this entire region, the Maglemosians settled along the banks of rivers and lakes, and it is for this reason alone that their artifacts, embedded in postglacial peat, have been preserved relatively intact. Although Maglemosian culture appears to have persisted locally throughout the entire Mesolithic period, the Atlantic period is essentially characterized by the emergence of a new cultural variant, named after the Ertebölle waste heap on the Litorina Lake shore in northern Jutland. A notable feature of the flint industry of these coastal inhabitants of the Litorina Sea is the replacement of microlithic triangles and points with blunt backs by cross-cut arrowheads made from pieces of narrow blades, as well as the

remarkable growth of a ("heavy") tool inventory for woodworking. Regarding the latter, it is particularly noteworthy that core tools were greatly outnumbered by flaked tools, and that among the core tools, axes supplanted transverse axes.

The origins of the Ertebölle coastal culture are exceptionally obscure, as the beach deposits of the preceding Ancylus phase of the Baltic Sea were destroyed by rising water levels, and it is not known when specialized coastal cultures first emerged in this region. Furthermore, since the Litorina coast in the southern Baltic Sea region and the corresponding beach zones of the North Sea are now submerged, it is impossible to determine the exact geographical distribution of the coastal cultures.

Next, we can turn our attention to the areas that first became accessible to humans with the transition from the late glacial to the postglacial period. As far as we know today, Ireland was first settled by humans during the Boreal period. At that time, the land was more extensive and the Irish Channel was narrower than it is today.

Most evidence of Mesolithic settlement in Ireland has so far been found in the north of the country. The best-defined culture, named after the town of Larne in Antrim, is divided into two phases. Unfortunately, only the stone tool industries from both phases have survived. The older Larne phase essentially consists of such a meager blade industry that it reveals no definite cultural connections. Points and blade scrapers are absent, and of the blades themselves, only a few microlithic specimens with blunted backs point to Upper Paleolithic origins. Another characteristic of these industries is the tapering of the thick ends of certain blades through secondary retouching, which may have served the purpose of shafting. In addition, there are a number of tools in the form of thick awls or pointed chisels.

A certain type of blade reappears in the later (Atlantic) period of the Larnian culture, including some with a more pronounced tang at the thick end. In general, this later industry is characterized by a decline in blade-making techniques and a predominance of massive flakes. A new feature now appears in the form of core tools—hewn axes and transverse axes—sharpened by flakes running transversely to the tool's axis—a clear indication of influence from the Maglemosean culture, however late that influence may be dated.

Scotland is another region that appears to have been settled for the first time during the postglacial period. Traces of a culture related to the Larnian culture appear in the far southwest, and the assumption that a blade-using hunter-fisher population crossed over to Ireland from here cannot be dismissed. Perforated antler blades from the Litorina period, found among the skeletons of beached whales on the shores of the Firth of Forth, correspond to those used by Mesolithic groups in the western Baltic region. It seems certain that influences from the northern forest cultures reached Scotland, as well as Ireland, during the late stage of the Larnian period. Links to Maglemose culture were indeed identified through the use of harpoon heads made of deer antler, which were produced by the Obanian people. These people inhabited the coasts and islands of western Scotland as sea levels receded following the Litorina period. Since they used rock shelters and left behind shell waste, much more is known about their way of life and material culture than is known about the Larnian people. The scarcity of raw materials meant that a piece of flint was reworked so many times that little of it remained. Particularly characteristic of this culture are bone and antler points, which are serrated on one or both sides and are sometimes pierced at the widened shank for attaching a cord. Although in some cases these harpoons may show Maglemosean influence, the connections primarily point to the Azilian. Even though the two cultures are so far apart in space and time, it is by no means impossible that

they were genetically related. In this context, a discovery in northern England at Victoria Cave near Settle in Yorkshire merits the greatest interest. Here, a harpoon made from reindeer antler and of a characteristic Azilian form was found, associated with scrapers, pestles, and flakes, as are commonly found at Azilian sites. Such a find strikingly demonstrates the distances over which the migrations of hunter-fishermen may have extended. Furthermore, the fact that reindeer antlers were used instead of deer antlers suggests that an Azilian antler industry already existed in this northern region as early as the Early Mesolithic. It is therefore quite possible that the Obanien population inherited its cultural heritage primarily from the descendants of the Magdalenian reindeer hunters, who developed their distinctive Azilian culture in northern Spain and southwestern France. Similarly, microlithic industries are also known from Scotland; however, some of these date to a time when agriculture was already common in parts of the country.

At the beginning of the postglacial period, a large part of Scandinavia was still covered by ice sheets, and extensive areas south of the ice margin, such as central Sweden and southern Finland, were still largely isostatic subsidence zones flooded by water. The melting of the ice and the resulting uplift of the land made it possible for vegetation, animals, and eventually humans to settle in larger areas. For example, the earliest traces of human presence in southern Finland date to the Boreal period, during the Ancylus stage of the Baltic Sea, when the land was just beginning to take shape. Finland's oldest well-defined culture, the Suomusjärvi culture—which dates to the Litorina period of the Baltic Sea—is characterized by the widespread use of polished stone tools, including knives and spearheads made of slate. At the same time, the colonization of land was also progressing along the Atlantic and Arctic coasts of Scandinavia. The presence of particularly rich stone tool sites in the Arctic province of Finnmark has led some prehistorians to suggest that these early coastal settlers originated in the east; however, many experts tend to believe that these inhabitants of Finnmark were in fact the vanguard of a northward migration from the western Baltic region. Intermediate sites are known from western Sweden and the southern Norwegian province of Østfold, as well as from Fosna in the estuary of the Trondheim Fjord.

As noted above, Mesolithic cultures continued the ancient way of life based on hunting and gathering in a Holocene environment. But we should not forget that we likely owe to Mesolithic communities the first steps in the domestication of animals and plants—the dual foundation of the mixed agricultural economy *[cf. K. J. Narr, p. 522]*—upon which all further cultural progress depended. The oldest agricultural cultural remains—

discovered through excavations in Anatolia, Syria, Mesopotamia, and Iran may date back to the 5th millennium B.C., but it is likely that the beginnings lie even earlier. The formation of the "tells"—the settlement mounds of the Orient—in particular requires a certain stability of the settlement; and it is noteworthy that traces of metalworking have been found in all but the very lowest layers of some of these mounds. Neolithic villages such as Mersin in Cilicia and Hassuna in Mesopotamia do indeed presuppose a relatively advanced stage of agriculture, since they formed the beginnings of settlements that remained tied to these locations for thousands of years. The difficulty of discovering concrete archaeological evidence for the beginnings of agriculture is obvious. Nevertheless, there are already a number of indications; for example, excavations in the Mugharet-el-Wad Cave on Mount Carmel in Palestine uncovered, in the layers of the Mesolithic Natufian culture (named after a site in Palestine), a number of bone handles from harvesting knives and a large quantity of flint teeth used to reinforce their blades. Many of them show a patina typical of that produced by cutting grain. Yet the Natufian people relied primarily on hunting, and their flint industry is in every other respect Middle Paleolithic. It is particularly interesting that the method of inserting flint pieces into the grooves of the handles is characteristically Mesolithic, and that the Natufian people decorated the ends of their harvest knives with engravings of wild animal heads. We have no way of determining whether the Natufian population used the harvesting knives to cut wild grains or whether they had already taken the step toward cultivation. What is certain, in any case, is that even at an early stage of their development, they were producing harvesting tools characteristic of the earliest farmers in Africa, West Asia, and even Europe.

Also significant is the recently discovered site of Qualat Jarmo at the foot of the Kurdish mountains southeast of Mosul. The Jarmo people (probably from the 5th millennium BCE) were indeed farmers who grew wheat and barley and raised sheep, goats, cattle, pigs, and dogs. However, they evidently did not practice pottery-making, but instead used baskets and clay-lined cavities. Their flint tools included harvest knives, blades, burins, and microliths. It is likely that traces of Mesolithic humans will be found widely across the Iranian Plateau in the future, which is one of the main centers of early agriculture.

In the Belt Cave at the foot of the Caspian side of the Elbrus Massif, a sequence of Mesolithic strata is directly overlain by Neolithic ones containing evidence of agriculture and pottery. In contrast, the two lowest strata yielded

of the two settlement mounds at Sialk (on the western edge of the Inner Iranian Desert), in addition to evidence of pottery and ground stone tools, microliths and bone handles for harvest knives of the same type as those found in the Natufian culture.

Although much about the beginnings of agriculture *[i.e., the economic system based on farming and livestock raising: cf. K. J. Narr, p. 522]* remains unclear, it is already evident that the decisive steps in the Near East had already been taken while Europe was still inhabited by Mesolithic hunter-fisher peoples who settled loosely along the banks of rivers and streams, by lakes and the sea, and on the edges of boreal birch and pine forests. Moreover, the first advanced civilizations in Mesopotamia and the Nile Valley had already outgrown their agrarian foundations and possessed a considerable written tradition before the art of agriculture had even reached the temperate zone of Europe. As for Asia, it is likely to turn out that the very climatic and ecological changes responsible for the transition from Paleolithic to Mesolithic hunter-gatherer societies also prompted some hunter-fisher groups to make their first attempts at domesticating animals and plants; and it is certain that Mesolithic or post-glacial hunting persisted for only a relatively short time in the regions that proved to be the pioneering areas of the new economic system. The duration of the Mesolithic period varies from region to region and can serve as a useful measure of their economic development, depending on whether the region in question was incorporated earlier or later into the sphere of the expanding agricultural economy.

It follows that, when studying Mesolithic cultures, one must take into account not only their Paleolithic heritage and the changes in the physical environment during the Holocene, but also the contact between Mesolithic hunter-fishermen and neighboring agricultural groups, and ultimately their absorption into sedentary farming communities. The penetration of Neolithic elements into a Mesolithic substrate is particularly evident in the Oran region of North Africa [see K. J. Narr, p. 505]. The Neolithic cultural wave spread here from the high plateau of Oran and Algeria across the Sahara and along the Atlantic coast as far as Senegal and even into the Congo region. It is evident that this population lived primarily by hunting, as their campsites yielded large numbers of flint arrowheads. These include microliths of the Mesolithic Capsian tradition: triangles, crescents, and points with blunt backs, as well as numerous cross-cut arrowheads—some with flat retouching—and a large number of stemmed and winged arrowheads, as well as those with only stems and concave bases, all of which are worked on both sides, and many of which resemble types common in Predynastic Egypt [cf. K. J. Narr, p. 505 ff.]. Another significant element is pottery, the remains of which were found in particularly good condition in the cave sites of Oraniens: rounded or pointed-bottomed vessels, some of which were suspended by strings attached to pierced handles and which

beautifully decorated with incised and grooved lines, impressions from fingertips or combs, and paint. Of particular interest are the rock paintings, which are generally carved into the cliffs overlooking such encampments. These works of art depict both domesticated and wild animals. They reveal the influences exerted by Predynastic Egypt on the descendants of the Cape hunter-fishermen.

Given the mobility of hunters and fishermen, one should always consider the possibility that cultural elements spread far from their centers. It is therefore possible that the pointed-bottomed pots, which are already found in Denmark's earlier Ertebølle culture, indicate such a far-reaching influence and should not be explained as independent inventions.

More certain are the indications of contact between hunter-fishermen and farmers who lived side by side in the same region. This can be observed with sufficient clarity in the successive stages of the Tardenoisian, which are stratigraphically documented in the rock shelter at Cuzoul de Gramat (Lot department) and at Martinet, Sauveterre la Lémance (Lot-et-Garonne department). The discovery of some domestic animal bones among those of hunted game indicates that the Tardenois people must have been in contact with livestock herders at a very early stage of their history. In the flint industry, such a connection is evident in the use of flat retouching on the typical Tardenois point and on cross-cut arrowheads during the middle phase of the sequence, and even more clearly in irregular crescents or triangles (mistletoe-leaf points) with flat pressure retouching across the entire convex side and usually also across part of the flat lower side. In the final period, it was not uncommon for the Tardenois people to use even broken, polished stone axes from their neighbors as raw material for their microlith production.

Over time, the Mesolithic hunter-fisher peoples of Europe adopted the predominant agrarian way of life. This occurred partly during the Neolithic period, but also partly even later.

Beyond the areas that were incorporated into the sphere of agricultural economy in prehistoric times, the ancient hunter-fisher cultures continued to thrive in vast regions, many of which only became accessible to humans as a result of the postglacial geographical upheavals. Here, on the edge of the range of birch, pine, and the tundra—much of which is covered by snow for nearly half the year—that cultural community developed which spans the entire circumpolar zone from Norway through Northern Eurasia to North America *[see K. J. Narr, p. 507 ff.]*. These Arctic cultures, which—despite their broad uniformity—exhibited very diverse characteristics, descend from Mesolithic ancestors, insofar as their territories were first settled at a time when Mesolithic cultures predominated in the temperate zone of Europe. Their general way of life and many elements of material culture *[especially those of the ice-hunting culture]* correspond to those found in the Middle Stone Age of southern Scandinavia. However, there is also evidence that

that the Arctic cultures were shaped both by extreme geographical conditions—which, of course, varied greatly, e.g., between the coast and the interior or between forest and tundra—and by contact with the farming communities of Europe's temperate zone.

2. FOOD SYSTEM

Although—as has already been emphasized—Mesolithic groups must have transitioned to agriculture and livestock raising, most continued to live, like their Paleolithic ancestors, as hunters, fishermen, bird catchers, and gatherers of mollusks and plant materials. As far as hunting is concerned, significant changes occurred in the fauna of areas subject to far-reaching ecological transformations, such as in the periglacial zone, where open landscapes were replaced by forested areas. This may go some way toward explaining the northward spread of the bow in postglacial Europe and the associated microliths used to tip and notch the arrows. Finds at the Danish peat bog site of Holmegaard show that the Maglemose people possessed sturdy elm bows measuring 1.50–1.60 m in length, whose carefully shaped handles were tapered at the sides but otherwise thicker than the rest of the bow. The same population crafted arrow shafts from pine wood. Traces of resin above the notch at the base of the shaft suggest that the arrows were fletched, as is also the case with those depicted in the rock art of eastern Spain. As a rule, the arrows taper evenly to a point, beneath which there are grooves for holding flint splinters or microliths. The discovery of an almost complete aurochs skeleton near Vig in Jutland supports the view that even larger prey animals were hunted with arrows reinforced by microliths. Two characteristic flint points were found together with a smooth flake in the chest area of the aurochs, whose ribs were embedded with fragments of other small flint projectiles. Further evidence of the penetrating power of microliths attached to the tip of an arrow is provided by the human skeleton discovered in a shell midden at Teviec on the coast of Morbihan (France). The man had evidently been killed by an arrow tipped with a triangular microlith that had penetrated his lung and reached deep into his sixth rib. There is evidence that, toward the end of the Mesolithic period, the

the arrowheads in common use at the time were supplemented by the transverse-cut type, whose cutting edge was formed by a section of a blade's cutting edge. To hunt birds and small fur-bearing animals, the Maglemose people used thick-headed wooden bolts of a type still in use today across large parts of Northern Eurasia.

Particularly numerous are serrated and toothed points made of antler or bone, which were either firmly set into the shaft or loosely attached to it with a cord *[as was the case with the hunter-fisher peoples of the circumpolar cultures: cf. K. J. Narr, p. 513]*. Whether the Azilian harpoon heads were actually used as such, or whether they were merely spearheads connected to the shaft by short cords threaded through the hole at the base, cannot be determined with certainty. It seems, however, that certain short, broad antler points from Ertebølle shell middens—with strong barbs and perforations at the base—were in fact used as full-fledged harpoon heads, likely in conjunction with swim bladders, for hunting marine mammals.

A characteristic of Mesolithic settlements in Europe was the systematic use of the food resources provided by the sea coasts and, to a lesser extent, the sea itself. A start was already made in this direction during the Ice Age in the Mediterranean; but since Europe's late-glacial coasts are now submerged again, it is difficult to determine to what extent marine animals played a role in the subsistence of Upper Paleolithic humans. In the post-glacial period, on the other hand, there is evidence of a distinct coastal settlement, although it must be said in all fairness that a true intensification of marine hunting and fishing at sea did not occur until the consolidation of the agricultural economy.

Turning to coastal settlements, it is appropriate to begin by mentioning the shell middens of the Iberian Peninsula, located near Mugem, about 60–70 km from the mouth of the Tagus. Today, seawater does not reach these dumping sites; however, it is argued that it must have done so during the Mesolithic period, because some of the species used as food by the shell midden people originated in the sea. The shell middens, which appear to have been inhabited year-round, are very long but no more than a few meters wide and even less high. They consist of discarded shells—mainly from coastal and marine mollusks—along with other food waste and charcoal from hearth fires, and contain discarded weapons and tools

as well as a large number of burials. The Mugem people also hunted forest animals and birds on a considerable scale, even though they settled on the edge of the Tagus Delta in order to devote themselves to fishing.

Traces of a completely different coastal culture were discovered in the northwest of the peninsula, centered in Asturias but extending as far as Santander. Wherever it appears in the stratigraphic sequence, the Asturian culture is younger than the Azilian, and it appears to have persisted into the Metal Age. The characteristic tools—quartzite picks, wedges, and scrapers—are not only very archaic but also very monotonous in character, supporting the view that the coastal settlers of the Asturian culture, once they had found a secure and easily accessible food source, maintained their way of life without change. They usually sought shelter in the front part of natural caves; and in front of these, their "kitchen waste" accumulated to a length of 50 m and a width of 12 m. The bulk of the waste material consisted of discarded mollusk shells, but one-seventh of it was made up of the bones of hunted game.

A particularly vivid picture emerges from the settlements of the French Tardenoisian people on the small islands of Hoëdic and Téviec off the coast of Morbihan. Shellfish, especially oysters and cockles, provided the most important source of food. However, the condition of the teeth of the people buried in the shell mounds indicates that plant-based food also played a significant role.

Wild boar and red deer, which were likely hunted on the mainland, contributed a certain amount of meat. Apart from a few seal bones, there is little evidence that marine mammals were hunted on a large scale. The Tardenoisian people of Téviec and Hoëdic engaged in some degree of sea fishing; but it should be noted that the fish they caught were mainly species that could also be obtained in the immediate vicinity of the coast. The islanders also subsisted, to a not insignificant extent, on seabirds. However, these were very easy to catch at their breeding sites on dry land.

In the British Isles, evidence of Mesolithic coastal settlement has been preserved only in the north, where the Litorina coastline lies above today's sea level. The most complete picture is provided by the coastal and inland shell middens of Oban in western Scotland.

where we again find a combination of shellfish gathering, fishing, hunting, and bird trapping. Sea fishing is better documented here than in the cases mentioned so far; for in addition to fish living near the coastal cliffs, the Obanien people caught, for example, haddock, conger eels, stingrays, and certain species of sharks, the capture of which required boats. The discovery of pierced antler hoes alongside the remains of large whales beneath the Litorina strata of the Firth of Forth indicates that the Mesolithic population of Scotland knew how to take advantage of opportunities such as whale strandings.

The most numerous and best-studied shell mounds in Europe are located on the Litorina coast of northern Denmark. The shell mounds extend along the ancient shoreline. Their length is usually considerable, whereas their width and height vary greatly. The Ertebölle shell midden, for example, measures about 141 m in length and 20 m in width, but is only 1.5 m high. Shellfish constituted the main food source for the people who inhabited these shell middens. Bones of cod and haddock indicate that fishing was conducted using rods from boats. Remains of a large number of waterfowl, such as eider ducks and wild swans, likely indicate snare hunting on the beach. Remains of porpoises and certain species of seals are also found among the kitchen waste. They show that hunting was also conducted from boats using bows and arrows and harpoons. Bones from wild animals, such as wild boar, red deer, and roe deer, prove that hunting inland was equally common; and it is significant that among the remains of marine fish, some freshwater species are also found. Until the final stage, when Neolithic agriculture replaced the hunter-fisher population, the dog remained the only domesticated animal of the Ertebølle culture. Remains of dogs have been found in Mesolithic settlements in many regions of Europe. The oldest date back to the Boreal period, just as they are found in the Natufian culture of Palestine, while they are conspicuously absent from Upper Paleolithic sites.

It has been shown that fishing played a major role in the activities of coastal dwellers; and there is evidence of considerable development in this area of food procurement. Although fishing was already practiced in the Upper Paleolithic period, we have definitive evidence of some fundamental methods only from the Mesolithic period onward. Fishing hooks first appear in Mesolithic cultural contexts, e.g., in the Natufian culture of Palestine and in the

Maglemose culture of Northern Europe. Mesolithic fishhooks were crafted from bone; their tips were always smooth and without barbs. The wooden fish spear, which was usually fitted with a serrated tip made of bone or antler, seems to have appeared sporadically as early as the Upper Paleolithic period, but only became more widespread among the Maglemose people of Northern Europe *[and in the circumpolar cultures; see K. J. Narr, p. 513]*, who used it particularly for catching pike in late spring and early summer. The same population also used nets made of willow bast fibers, weighted with stones, and whose upper edge was held at the water's surface by elongated floats made of pine wood. Basket traps or fish traps were made from debarked and interwoven twigs. These were funnel-shaped containers up to 4 m wide, featuring an inward-sloping cone on the inside of the opening to prevent the fish from escaping. Such well-designed structures first appear in Denmark's Ertebølle culture, although they may represent an older invention. It is possible that they were used in conjunction with wooden weirs, and it is likely that weirs made of boulders were in use in ancient times during seasonal migrations of fish, such as salmon.

3. SETTLEMENTS

Given the scarcity of food sources presumed to have existed during the Middle Stone Age, the people—who generally continued to live in small groups of three or four families—must have required an extensive foraging range to secure their livelihood. Nevertheless, there are reasons to believe that the population, which continued to rely on hunting and fishing during the postglacial period, experienced a significant increase in numbers. Conditions for this way of life must have deteriorated in the areas affected by post-pluvial aridification. By contrast, the more favorable climate and the richer plant and animal life in the formerly periglacial regions certainly increased the amount of food available. Furthermore, one must take into account the vast expanses in the Northern Hemisphere that were opened up to human settlement for the first time by the postglacial retreat of the ice sheet. Another factor to be considered—particularly in regions such as Northwestern and Western Europe, into which the new agricultural way of life penetrated from outside—is that the population—

The pressure of competition must have fallen primarily on those hunter-fisher groups that maintained their way of life as their habitat was encroached upon by immigrant groups. It may be that this, combined with the incentive to supplement their diet through trade with the newcomers, led to an intensification of marine hunting, which is characteristic of the final stages of hunter-fisher communities in Northern Europe.

A common trait among hunter-fisher groups is the practice of moving their camps in accordance with seasonal food sources. There is no doubt that many Mesolithic communities repeatedly relocated their hunting grounds and, consequently, their settlements. Occasionally, this can be directly demonstrated, as in the case of the Maglemosian lakeside settlements, which—as evidenced by animal remains—were inhabited only during late spring and early summer. Furthermore, it seems highly unlikely that the people who used microliths inhabited their settlements in England during the winter, since these were located at considerable elevations and were exposed to the harsh elements; and there is some evidence suggesting that they sought shelter in lower-lying areas during this time, such as the Creswell Caves. The shell midden settlers along the coasts, however, formed a notable exception to this general rule.

First, the ever-present supply of shellfish offset seasonal fluctuations in the food supply. The more balanced climate of the Atlantic Period—to which almost all Mesolithic coastal settlements in Europe can be attributed—and the convenient proximity of the sea mitigated these seasonal fluctuations. The study of biological remains from coastal settlements of this period has shown that they were inhabited at all times of the year.

As for settlement types, rock shelters and caves, where available, continued to be used, whether by the Azilian people or by other groups, such as the Natufians, Capsians, Sauveterrians, Tardenoisian, Asturian, and Obanian groups in areas as far apart as Britain, France, Spain, Italy, Central Europe, North Africa, Palestine, Iran, and southern Russia. Very little is yet known about the artificial structures that must have supplemented the natural shelters and undoubtedly replaced them over vast areas. Although numerous Maglemesian bog settlements—favorable for the preservation of organic material—have been studied

, only rare actual traces of dwellings have been discovered so far, apart from elongated bark floors at Aamose in Denmark, which appear to have been covered by relatively flimsy poles driven into the ground all around and bent together. Despite the hearths found in many shell mounds, no remains of dwellings have been unearthed. Even taking into account that some excavations were inadequate, it seems likely that tents made of animal hides were the most common form of shelter, similar to those already in use in Schleswig-Holstein during the Late Glacial period [*cf. A. Rust, p. 313 ff.*], or huts made of perishable plant material.

Hut floors have been found quite commonly in association with the Tardenoisian and related cultural groups in the temperate zone of Europe. They were usually sunken into the ground, but only rarely have any remains of the superstructure been preserved. Some of the best-studied huts are those at Tännstock on Lake Federsee (southern Germany) and at Lake Wauwil (Switzerland). At both sites, the huts had an irregular oval shape, some with hearths inside and a stone threshold on the narrow side. From Ansbach in Franconia, a stone-paved circle—almost certainly the floor of a hut—is known, and in Bockum near Lüneburg, closely spaced post holes—some of which were arranged in pairs on one side and likely originated from flexible poles bent upward to form a roof—defined the floor plan of a hut, *[perhaps similar to the beehive or dome-shaped huts of the Euro-African hunter culture; see K. J. Narr, p. 512]*. Hollows, believed to be hut floors and containing Tardenoisian-type microlithic industries, have been investigated in Belgium. Similar pits, occasionally featuring one or two post holes at the edge, have been found in the far southeast of England in association with the local Horsham culture, e.g., in Farnham (Surrey), where a number of such dwelling traces were clustered around a spring. It may be that such huts with semi-subterranean floors were intended to serve as winter dwellings in areas where natural shelters were lacking.

4. TECHNOLOGY

The fundamental craft activity of Mesolithic humans was the working of flint. It determined the limits within which they could shape organic material for their purposes. As already emphasized, the main tradition of Mesolithic stone tool production stemmed from Paleolithic sources, particularly the manufacture of microliths using the micro-chipping technique, but also that of the...

various tools for scraping, scratching, drilling, and engraving. It is often said that burins lost their importance during the Mesolithic period, but this applies only to those stone tool industries in which—as in the Tardenoisian—the working of antler and bone played a minor role. In contrast, among the Maglemose people and even among the late Mesolithic Ertebölle population, burins remained in use as long as the hunter-fishermen retained their cultural independence.

Among the few characteristic innovations in Mesolithic flintworking are axes and transverse axes, which—as we have already shown—are associated with the late-glacial expansion of forests. Two main groups can be distinguished: core tools, in which the tool was fashioned by detaching waste flakes from a flint nodule, and flaked tools, which were separated from the nucleus (core) by a single strike directed more or less at right angles to the cutting edge of the instrument. The cutting edge of core tools was sharpened by chipping off a flake using a strike directed from the side or at a transverse angle. This technique could be repeated whenever the cutting edge became dull, until the object was finally reduced to a small stump and discarded. When striking out the tools, it was possible to give them a fairly symmetrical cross-section relative to the handle to serve as an axe, or to make one side flatter than the other, thereby producing transverse axes whose cutting edge was at a right angle to the handle. The Maglemose people usually secured the flint axes in holders or sockets made of antler or wood. These were drilled through, and the wooden shaft was inserted through the hole. This ensured that a large portion of the vibrations generated during the use of the tool was absorbed.

It should also be noted that, in contrast to agricultural cultures, Mesolithic humans do not appear to have ever supplemented the percussion technique with polishing when working flint.

The technique of creating a smooth surface and cutting edge through polishing was originally developed by Upper Paleolithic humans in the working of antler and bone, and it is striking that during the Mesolithic period in Northern Europe, it was initially applied to rock rather than flint. Particularly noteworthy is a perforated transverse axe made of fine-grained gneiss with a polished surface and cutting edge from the Danish Maglemose site at Holmegaard—a tool whose manufacture was certainly inspired by antler blanks. A series of boulder axes, whose natural shape was made more regular by chipping and whose cutting edge was sharpened by grinding, comes from Sandarna, a site in western Sweden of similar age. A technologically advanced type, the roller axe—which was ground or chipped into a more or less round cross-sectional shape with a pointed neck and a flat cutting edge—apparently appeared without

in the earliest Danish period of coastal settlements (Carstesminde). It is likely attributable to early influence from an agricultural region.

The Ertebölle shell mounds also yielded several tools made of ground slate, comparable to those from circumpolar or Arctic cultures *[cf. K. J. Narr, p. 513]*, and it is noteworthy that similar objects have been found in Ireland, including one dating to the Boreal period.

The drilling of stone—which, like flaking and polishing, was most likely first developed while working with organic materials such as antler and bone—appears to be a Mesolithic achievement. The Holmegaard transverse axe, already mentioned, may again be cited as an example of direct drilling. Much more frequently, perforation was achieved by chipping or hollowing out from both sides. The most common objects with hourglass-shaped perforations are rounded pebbles made of quartzite or similar rock, which may have served as grave-post weights, such as the Kwe of the Bushmen [cf. K. J. Narr, p. 506] or, in exceptional cases, may have served as hunting clubs. Thick, round specimens from the Boreal period are known from England and Denmark, including one from the Maglemose site at Svaerdborg. Perforated weights or clubheads also occur in the Capsian and related microlithic industries of Northwest Africa.

Organic material was used extensively for hunting implements and other tools, particularly the antlers and bones of animals hunted for subsistence. The extent of the use of bones and antlers varies from group to group. While, for example, the Tardenoisian people made only limited use of these raw materials, the Maglemosean population utilized them to produce a large number of objects. Spear points, fishhooks, axe and adze handles, sewing needles, tools for leatherworking, etc., were made from them. It is noteworthy that, during the Middle Stone Age, bone gradually replaced antler in the manufacture of harpoons and spearheads. The Early Mesolithic populations of Europe, like their immediate Paleolithic predecessors, used almost exclusively antler for this purpose. This applies not only to the Azilian people but, according to the finds from Star Carr, also to the pre-Boreal Maglemose culture of northwestern Europe. This behavior is all the more surprising given that the forms of the primary projectile of the mature Maglemose culture were already present at Star Carr and the game hunted remained essentially the same. Nevertheless, all comparable tools from Boreal sites were made of bone. The care with which bone was worked in the Maglemose region demonstrates the importance of hunting tools for cultural groups that lived by hunting. However, it must be added that the preference for bone tools is a characteristic feature of northern cultures, which—like the use of bone handles in conjunction with flint axes and transverse axes—helps distinguish them from those of southwestern Europe.

Another characteristic of the Maglemose culture is the use of moose and deer antlers to produce heavy, perforated hoes, whose blades were either perpendicular to or aligned with the wooden handles; some of them reveal an excellent understanding of the properties of the raw materials. For example, the Early Maglemose people of Star Carr made very effective hoes from the lower portion of moose antlers and the attached pieces of the skull cap. Similar tools were produced in a simple manner from parts of deer antlers by the Late Mesolithic populations of Northern Europe. Among the Ertebølle people, axes whose cutting edge ran in the same direction as the shaft gained predominance over the transverse axes that were very popular in Maglemosia. The northern shell midden dwellers also improved their antler picks by using a section of a main antler beam with a branch still attached; they shortened the branch, hollowed it out to form a shaft, and thus created a socket. Less commonly, antler was fashioned into axe-like blades, which were then set into a wooden or antler shaft.

Although traces of it have been preserved only in the bogs of Northern Europe, wood was another raw material used extensively in forest cultures, particularly in hut and boat building and the manufacture of numerous tools, such as bows, arrow shafts, and paddles. The tools available to Mesolithic people, however, were not of a type that would have allowed for particularly fine carpentry work. Core axes and transverse axes were sufficient for felling thin-barked trees, such as the birches found at Star Carr. For shaping forms, the techniques of whittling and carving were generally used, while grinding was employed for surface finishing. Nevertheless, the bows from Holmegaard are just as well-crafted as all later prehistoric examples. Bark was also a popular raw material. Numerous tightly wound rolls of birch bark were discovered at Star Carr; to this day, the Lapps of northern Sweden stack their supplies of birch bark in the same way. Among other things, it was the main raw material for extracting resin and birch tar, which were needed, for example, to secure arrowheads. Net floats found in Antrea (Finland) and Narva Siiversi (northeastern Estonia) were made of pine bark, and the strands used to weave the Antrea net were spun from willow bast.

An excellent understanding of how to process hides for clothing and other purposes was part of the legacy from the Paleolithic era, as evidenced by the number of flint scrapers and tools used for leatherworking

Mesolithic settlement sites, it can be concluded that this practice continued to play a major role. Large quantities of animal tendons were needed for bowstrings and harpoon lines.

There is no evidence of weaving among any Mesolithic group. Various types of braiding, on the other hand, were certainly practiced. Fishing nets from the eastern Baltic regions have already been mentioned; and it may be characteristic that the net pattern was an important ornamental motif in the Maglemøsen art of Denmark and northern Germany. The basket traps and fish weirs already mentioned reveal a knowledge of the twisting technique in the basketry of the Ertebölle people. It is worth noting here that the Jarmo people, mentioned in connection with the onset of the agricultural way of life in Western Asia, wove nets and baskets, while pottery was apparently unknown to them.

Pottery appears in only a single Mesolithic culture in Europe, namely the Ertebölle culture. It seems to have been established that the Ertebölle people practiced pottery long before agricultural cultures reached Denmark and—if the geochronological dating of the Litorina phases is approximately correct—even before the new economic system had reached any part of the European mainland. Early Ertebölle pottery either implies a connection to distant cultural groups—for which, in my opinion, there is more evidence (see above, p. 326)—or an independent invention (as such, it would be of extraordinary importance). Recent investigations in stratigraphically well-dated coastal settlements have shown that thick-walled pottery already appeared during the period of the first of the four Litorina Baltic Sea transgressions, which can be distinguished along the coasts of Denmark. The pots were very wide and tall, with a soft profile, without handles or spouts, and had pointed bottoms. They were constructed using the spiral-coil technique from a clay body mixed with coarse grit. The surface was usually fired; decorations were limited to the simply flared rim. In addition, the Ertebølle people produced low, open vessels of elongated shape. Analogies with Eskimo artifacts and the presence of fatty residue inside them suggest that these basins likely served as blubber lamps. This makes it all the more interesting that they are believed to have first appeared no earlier than the third stage of the Ertebölle culture—the one immediately preceding the Neolithic—that is, at a time when the hunting of seals and smaller whale species was gaining in importance.

5. TRADE

If we wish to investigate the extent to which trade existed during the Mesolithic period, we must bear in mind that most human groups (unlike those that had a constantly available food source along the seashore) were accustomed to roaming more or less extensive territories throughout the year. Therefore, when natural objects or raw materials of non-local origin are found in Mesolithic settlements, it is risky to assume trade, because such items could easily have been collected during seasonal migrations. The use

of the chocolate-brown quartzite quarried in the Wommersom area near Tirlemont (Belgium) by the Tardenoisian people across very large areas of Belgium and the Netherlands can only be explained by the fact that the various, related hunter-fisher groups consistently sought out the same sources of raw materials for centuries and met their needs there. The best, indisputable evidence of trade is the widespread distribution of axe and adze blades in western Norway. They were crafted in workshops on the island of Bomlö off the far western coast, which were already in operation in this area before the spread of agriculture and traded their products over considerable distances to the mainland. Of particular significance is the fact that the stone used for the axes was sourced from another island, namely Hespriholmen, a few kilometers west of Bomlö, which is too small for workshops to have existed there. Thus, the fine-grained, tough stone from Hespriholmen had to make two sea voyages before it reached the mainland in the form of finished or semi-finished stone tools. There can be little doubt that the hunter-fishermen of northern Norway organized an extensive trade in finished goods or at least partially processed products, and that the people who maintained the quarries and stone-cutting sites on the islands lived, at least to some extent, off the proceeds of this exchange of goods.

6. TRANSPORTATION

Since trade was taking place, boats must have been in use in northwestern Europe as early as the Middle Stone Age—a fact that could also be inferred from the aforementioned evidence of sea fishing and sea hunting. The exact point in human history when seafaring began or when boats were first constructed instead of rafts is unknown. Nevertheless, the absence of any evidence for boats in all groups of Upper Paleolithic art seems remarkable. What is certain is that the first tangible evidence of seafaring dates to the Mesolithic period. The central section of a wooden paddle was found as early as the Early Maglemosian settlement at Star Carr, which dates to the end of the Pre-Boreal period, and a number of specimens—some of them complete—have been discovered in bog settlements of the mature Maglemosian period in Germany (Duvensee) and Denmark (Holmegaard and Aamose). The oldest boat found to date is a Boreal-period dugout canoe from Perth on the Firth of Forth, Scotland, which was made from a

pine trunk. However, there are reasons to believe that skin boats with light frames were built early on along the Arctic and North Atlantic coasts of Europe. These could have been particularly useful on lakes plagued by ice. Certainly, the boats depicted in the rock art of Arctic hunter-gatherers were essentially of the umiak type *[like the open skin boat of the circumpolar cultures: see K. J. Narr, p. 514]*, and it is worth noting that at all three sites (Forselv and Rödöy on the coast of Nordland and Evenhus near Trondheim) where boats are depicted, whales—and in Rödöy, seals as well—are carved immediately alongside them. It is likely that the fishermen of Larnia and Obania and the seal hunters of Northern Ireland and Scotland also used skin boats.

On land, hunter-fishermen could only travel on foot and would have had to carry or drag their necessary belongings, unless rivers and lakes made the use of boats possible. There is no evidence of watercraft in the temperate and Mediterranean zones of Europe. In the circumpolar zone, on the other hand, where vast areas were covered by snow for 150 or more days a year, there is evidence that a heavy, likely dog-drawn sled *[as in the ice-hunting culture; see K. J. Narr, p. 514]* was already in use during the Ancylus phase of the Baltic Sea. The high-sided sled with a load-bearing surface raised well above the snow and the ski are attested among Arctic hunter-fisher peoples during a period when agriculture was already flourishing in southern Scandinavia.

7. ART

The picture presented so far of Mesolithic communities—particularly those that existed on the fringes of early agricultural centers—is that of people who, in the changed post-glacial environment, lived off the proceeds of hunting and gathering with material resources that differed only slightly from those of their Paleolithic ancestors. It must be added, however, that Mesolithic people—like the Late Paleolithic cave dwellers before them—by no means limited themselves to satisfying their basic needs. One need only look at the tools and weapons of certain Mesolithic groups to find traces of artistic expression that can hardly be explained as “functions of a material nature.” It must be emphasized, however,

that traces of art among Mesolithic communities are almost entirely limited to the older hunter-gatherer cultures of the mainland, such as the Maglemosean and Natufian cultures. No signs of ornamentation were observed in the material possessions of the shell midden dwellers of Mugem, the Asturian, and Obanian peoples, and very few were found among the Tardenoisian population, where at most a few cross-hatched patterns on fish bones from Téviec can be noted. It is also characteristic that among the people who settled on the western shores of the Baltic Sea during the Litorina period, the strongest evidence of artistic activity is limited to the Carstesminde stage. An explanation for this may be found in the decline of the strength and independence of the old, ultimately Paleolithic way of life. It is true that the spread of the Neolithic economic system also inspired some hunter-fisher groups to innovate; but that does not alter the fact that the latest Mesolithic peoples were epigones. Moreover, they were separated from their spiritual ancestors—the free hunter-gatherer peoples of the Paleolithic world—by an ever-widening gulf of time and were destined to be displaced or absorbed by an alien economic system.

Among the Natufian people of Palestine, the artistic impulse—which reveals a distinctly keen sense for forms close to nature—found expression in engravings that mostly depict deer. In these rock carvings from Mugharet-el-Kebarah and Mugharet-el-Wad, the Paleolithic artistic sensibility indeed still lives on with full vitality. Nevertheless, it is certainly symbolic of the coming change that these engravings appear on harvest knives, which were intended to cut the harvest of the earliest farmers when the time came.

Among the Maglemesian peoples of Northern Europe, decorations are very often found on everyday objects. The most commonly decorated tools are flattened needles used in net-making, long pickaxes made from deer antler shafts that were pierced just above the base, spatula-like instruments fitted with ferrules, knife handles, and bone arrowheads with grooves for flint inserts, amber pendants, and, more rarely, perforated hooks and even axe and adze handles made of deer antler. At some sites in Schonen, particularly at Aggeröd, incised zigzag patterns have been found on stone slabs and especially on the bark of flint nodules. Three main techniques were used: (1) simple line incisions, which can be deeply carved but are sometimes formed only by scratch-like lines; (2) using a sharp instrument—

to produce rows of small wedge-shaped impressions; or (3) punctures and arrangements of small, rounded pits drilled into the surface at such regular intervals that one is inclined to think of the use of a fiddle-bow drill.

The patterns were mainly abstract in nature and included zigzag lines, herringbone patterns, hatched bands, fringes, triangles and diamonds, checkerboard and net patterns. The simpler linear motifs were sometimes arranged in parallel rows interrupted by blank zones. Sometimes the decorative elements were combined to form a grid pattern covering the entire surface. When more or less naturalistic drawings—or at least symbols suggesting human or animal forms—appear, such as the cervids carved on an antler shaft found in Ystad in southern Sweden, they are usually combined with geometric motifs. The drawing on an aurochs bone from Ryemarksgaarden near Sörö in Denmark is unique in that it appears to depict a kind of scene. Five men are depicted in a row, with their heads represented by triangles or diamonds with center lines, their bodies by elongated shapes filled with cross-hatching or a herringbone pattern, and their limbs by straight lines with right-angled bends. The figure on the left, with arms extended sideways and upward, is looking forward. Next come three figures viewed from the side, facing away from the first one, with no indication of arms. They are directed toward a fifth figure, which is looking partially at them but also has no arms and is flanked by three vertical zigzag lines. More often, only individual figures are depicted, and these usually consist of a single line or a pair of lines representing the torso; in the case of pendants, the perforation is located at the point of the head. On wide bone needles from Denmark, highly conventional human-like depictions were evidently used as decorative elements to cover the entire surface of the object.

It remains to be added that Maglemose art also includes a limited number of fully three-dimensional figures. These are made of amber and take the form of animal figures so crudely carved that the species can hardly be identified. Among them is a bird figure. The rest are indefinable mammal sculptures. Among them, a statuette from Resen near Skive in Denmark deserves special mention; its entire surface is adorned with a pattern of diamonds and zigzag-filled bands.

Most of the basic motifs of Maglemose art were already known to cave artists and can certainly be attributed to a Upper Paleolithic heritage. When we attempt to identify this more precisely, difficulties arise because our knowledge of the Upper Paleolithic cultures of Central and Eastern Europe is incomplete. It is true that many elements appear in the relatively well-studied art of the Late Magdalenian population of France; but a large portion of these were widely distributed during the Late Glacial period. The small proportion of naturalistic depictions among the Maglemosian people stands in stark contrast to the vivid animal images of the Magdalenian *[cf. F. Eppel, p. 363 ff.]*. This could, of course, be interpreted as a result of stylistic conventionalization during the final stages of the Magdalenian. However, one must not overlook the possibility that at least many of the roots of the Maglemose style can be traced back to the less well-known Upper Paleolithic cultures of Eastern and Central Europe. Furthermore, we know very little about the art of the Late Glacial reindeer hunters of Schleswig-Holstein and Denmark.

Although the Azilian people always lived under the same rock shelters as their Magdalenian ancestors, they can hardly be described as an art-loving population. The few schematic symbols are discussed elsewhere [see *F. Eppel, p. 367*]. It is obvious that these symbols are of more interest to historians of religion than to art historians. Although the parallel is by no means complete, it is tempting to compare the Azilian pebbles with the tschuringas of the Aranda and other Australian tribes, which are believed to contain the souls of deceased ancestors, and it is likely that the prehistoric painted pebbles served a similar purpose. Based on this hypothesis, the intentionally broken pebbles found at the Birseck site in Switzerland could well be attributed to the actions of enemies who sought to deprive members of another tribe or family of the protection of their ancestors.

8. BURIAL

Clear evidence of non-material considerations can be found in the graves of various Mesolithic groups. In general, inhumation was the norm, yet even at a single site, considerable variations can be observed in the position of the body and the provision of grave goods. For example, the Natufian people of Mugharet-el-Wad buried their dead both individually and in groups; one burial at the cave entrance contained ten individuals in three layers, and one on the terrace consisted of five skeletons. The dead buried inside the cave in a supine position lay stretched out, while those interred outside were generally curled up on their sides, though in various postures. Some were evidently buried without grave goods, whereas others were adorned with elaborate headdresses made of dentalium shells, hung with pendants made of bird bones, or decorated with beads made from gazelle phalanges. Some of the deceased also wore necklaces made of dentalium shells or twin pendants made of bone. Such grave goods remind us that the Natufian people, even in the

daily life. The craftsmanship applied to the twin pendants was in every respect just as meticulous and refined, if not superior, to that applied to objects of daily use.

Most of the Mesolithic burials found in Europe—including those in the shell mounds of Mugem in the Tajo Valley, where more than two hundred have been excavated—show little evidence of ceremonial arrangements; yet here and there, some very elaborate burials have also been discovered. Among the most interesting are those from the Tardenoisian shell mounds on the islands of Téviec and Hoëdic off the coast of Brittany. Here, as in the Natufian period, both collective and individual burials were practiced. As a rule, the graves consisted of pits less than one meter long, dug into the beach, atop which the shell mound itself rose; but sometimes they were paved or enclosed by stone slabs placed on their edges. Stone slabs were also commonly used to cover the dead, and small stone boxes containing ritual fire pits were erected over them. The bodies were buried sometimes in a seated position, sometimes lying down, with the head usually raised. The legs were bent, with the right leg always on the bottom, and the hands were generally placed on the thighs. In some cases, small children were found buried together with adults, at least one of whom was a man. Two men, two women, and a girl were buried one after another in the same grave. Red ochre scattered over the bodies recalls the customary burial practice of the Early Paleolithic [cf. A. Rust, p. 307]. The people of Hoëdic and Téviec had evidently been buried in all their finery. The almost regular presence of bone needles suggests that they wore fur cloaks. Necklaces, bracelets, and headdresses were generally made from pierced seashells. In the burial of a man and a child at Téviec, 1,130 shells of Cyprea europea, 520 of Littorina obtusa, 30 of Nassa reticulata, and 8 other types were found. Pierced animal teeth were also used as jewelry. A particularly noteworthy feature of the burials at both sites was the placement of stacks of deer antlers atop some of the graves. The association of antlers with fertility magic has Upper Paleolithic precursors and has persisted in various forms in European folk customs to this day.

Another variant of Mesolithic burial rites is provided by

two collective burials of skulls found in the Ofnet Cave in southern Germany, consisting of two pits dug into Magdalenian strata, containing microliths, and covered by Neolithic deposits. The skulls were tightly packed into two clusters containing 27 and 6 skulls, respectively. Indeed, the fact that those in the center were damaged while those on the outside were well-preserved suggests a sequential burial. Cut marks on the upper vertebrae found alongside the skulls indicate that they were severed immediately after death. The composition of the skulls by age and sex is also highly revealing. The fact that no fewer than 19 belonged to children could be explained by the high infant mortality rate. What is particularly striking, however, is that 10 of the 14 adult skulls belonged to women. This is consistent with the view held by some prehistorians that the Ofnet burials are the result of a full-fledged headhunting ritual, especially since it is quite common among modern-day headhunters to take possession of the heads of the individuals least capable of defending themselves. The ultimate motive for headhunting is the desire to appropriate the enemy's life force; it is possible that such motives also underlie the skull burials at Ofnet. In this context, it is significant that the skulls were missing from some Paleolithic burials, as well as from an Azilian individual found at Mas d'Azil. With their abundant sprinkling of ochre and the inclusion of necklaces made of snail shells and deer teeth, the Ofnet graves are reminiscent of Paleolithic customs. The fact that a specific skull cult—whatever its religious background may have been—did indeed flourish in this part of Germany during the Middle Stone Age is also evident from the occurrence of skull burials at other sites, such as Kaufertsberg, a short distance from Ofnet, where a single skull was found, and at Hohlestein in the Lone Valley (Württemberg), where the skulls of a man, a woman, and a child rested together with abundant ochre in a deposit atop three successive layers of stone paving.

Much less is known about the burial customs of the Mesolithic inhabitants of Northern Europe, although it appears that burial in a supine position with outstretched legs was the norm. Two such burials, enclosed in a shell mound at Stangenäs in western Sweden, can almost certainly be attributed to the Maglemose culture, as can the skull with accompanying long bones that was uncovered by peat cutters at Koelbjerg near Odense in Denmark. A

of the finest Ertebølle burials came to light during the dredging of the harbor at Korsør on the Danish island of Zealand. Although the lower part of the skeleton was destroyed, it was evident that the individual had been buried in a supine position. The deceased had been buried with a flint knife, which was carefully protected by a bark wrapping. Wooden posts stood on either side, and the skeleton was supported by pointed pegs placed under the shoulder blades.

Human remains from Ertebølle sites, particularly at Dyrholmen (Jutland), can likely be explained only by cannibalism. Large quantities of human bones were scattered throughout the entire encampment. Many of them show cut marks typical of the removal of flesh with flint knives. Furthermore, the long bones were broken in the same manner as those of wild animals to extract marrow. To what extent the Ertebölle people practiced anthropophagy—for example, to satisfy physical hunger—cannot be determined, but given what is known about modern-day cannibals, it seems likely that other, non-economic motives were involved. If early humans were obsessed with the desire to appropriate the life force of other humans, cannibalism was certainly the most obvious way to do so.

Although our knowledge of Mesolithic people is still in its infancy, it is already clear that, like people of all ages, they were also motivated by considerations unrelated to physical survival. Their aesthetic sensibility was less developed than that of some Upper Paleolithic groups and found expression solely in the technically refined working of bones and antlers. Everyday objects were decorated, small works of art were created, and people adorned themselves, as evidenced by finds of beads and pendants at settlement sites, but above all by the splendor of some burials. The attempt to secure the powers of life spirits is attested by the painted pebbles of the Azilian period and likely also by some depictions from the Maglemose period, particularly human figures. The occasional practice of cannibalism and headhunting also falls within this same realm. Finally, the interest in the dead—which gave rise to a wealth of burial customs—speaks to a belief in an afterlife, a belief confirmed by the ceremonial burials of the late Paleolithic period.

ORIGINS AND BEGINNINGS OF ART

BY HANS SEDLMAYR

1.

Art is creative long before it is beautiful, and yet such true, great art—indeed, often truer and greater than beauty itself. For within man lies a creative nature that immediately asserts itself once his existence is secure. As soon as he has nothing to worry about or fear, the demigod, active in his tranquility, reaches out for material into which to breathe his spirit. And so the savage shapes his coconut shells, his feathers, and his own body with adventurous strokes, grotesque forms, and vivid colors. And even if this sculpting consists of the most arbitrary forms, it will harmonize without any proportional relationship, for *a single* sensibility has fashioned it into a characteristic whole."

These sentences by Goethe not only outline a fruitful conception of the origin and early development of art, but they also contain, as a seed, a concept of art which, when developed, is entirely useful for determining where art begins and where it ends. According to this view, art is the shaping of a characteristic whole, a vivid character. People of that early era experienced such characters by virtue of a predisposition that unfolded within them—perhaps suddenly—especially in those phenomena that the history of religion, since Rudolf Otto, has designated as "numinous." Both the religious and the artistic have their origin in this category of phenomena.

A numen is, first and foremost, an indefinable, manifest "power" of which the "enraptured" human being becomes intuitively aware in a specific mode of experience. In the great formations of heaven and earth, especially in the great beast from which and with which the hunter lives, yet no less so in one's own inner self—which is "seized" by these forces, whether awake or dreaming—an ineffable power is experienced, one that is at once typical and manifests itself individually each time, be it the uncannily mighty, the shudderingly dreadful, the sacredly dangerous, the threatening, indeed the hideous; be it the fascinating, the beguiling, the breath-taking, captivating, moving, uplifting, inspiring, contemplative, and enchanting; be it—later—the liberating, soothing, and tranquil, the blissful, serene, charming, and graceful; be it that which provokes laughter, intoxicates, or is "comical," etc.

Certainly, such "characteristics" manifest themselves in things only when a person, adopting an intuitive, physiognomic attitude, opens himself to these "aspects" of things and allows himself to be moved by them. Yet they do appear *in things* as something objective —and, unlike feelings, they become all the more distinct the more one's attention is directed toward them. It is not as though things were dead in and of themselves and were only animated by us and endowed with these qualities: this view is rather the product of a later way of thinking that experiences the spiritual only within the human being, while the "outer world" has lost its magic and become devoid of mystery. That "mood" which modern man most readily still experiences in landscapes is like a faint, belated echo of that original, primal experience of the world.

In that original experience, there is no such separation between the external and the internal. Thus, for example, "anger" is a wondrously perceived principle that can be experienced both in nature—in a thunderstorm, a rockslide, or a "wild" fire—and in the psyche. What is psychologically anger is physically, for instance, fire and embers, or vice versa. The physical analog to anger, says R. Otto, is embers, flames, burning, radiance, heating, heat, and a dazzling glow. For elementary understanding, these qualities are not merely "images," but are identical with the essence itself.

Now, if the "elementary" person—that is, one who is open to the numinous—and this potential is inherent in everyone, even the most modern person, provided they have not become spiritually numb—experiences such "characteristics" vividly everywhere in beings and things, then they become an *artist* the moment they give them form. While in the religious experience of the numinous the emphasis lies more on the "power" that reveals itself in and through these phenomena, in the artistic experience it lies more on the vivid character of the phenomenon itself. Yet at this stage, the two cannot yet be separated. In the translation of such primal experiences into language, image, sound, concept, gesture, and architecture, we find the common source of myth, religion, art, and wisdom. It is here that the birth of the spirit and of art takes place. Therefore, in the living effect of true art, principles of form and principles of expression are utterly inseparable. Just as the symbol —which is itself merely a special case of this intuitive shaping—art, by opening up the "mind," simultaneously opens up something concrete, a "world." One may also say that every genuine "style" is rooted in a dense and very specific realm of numinous "characters."

The artist's achievement lies in creating a visual equivalent for a complex of specific, vivid characters as experienced. This translation of the numinous into specific "media"—be they words, images, sounds, tones, rhythms, forms, or colors—would not be possible at all, however, if these media themselves were not each endowed with a very specific range of "vivid characters." Of course, this does not mean, for example, that a specific color or a specific sound is assigned a fixed "expressive value" once and for all, but neither does it mean that every color or every sound could serve as a vehicle for any arbitrary "character." A sculpture by Michelangelo could never embody the character of lighthearted cheerfulness, and this has been the case from the very beginning of art and throughout all ages. Here, highly fluid, sublime, yet investigable interrelationships and laws prevail.

For this definition by no means applies only to "primitive" art: art is —no matter how much its forms of expression and its social integration have changed throughout history—essentially *one* and *the same* at all times. And even today, it arises from the same holistic, physiognomic-intuitive primal experience as it always has. In the creation of every genuine work of art, even today, the "prima materia" is the experience of a character that is still undifferentiated yet richly saturated with vividness; this character forms the unifying principle of the work of art, within which it is richly elaborated.

2.

This concept of art, which Goethe merely elaborates upon, makes it possible to answer the question of what, among the creations of early humans, constitutes art and what does not.

When Aurignacian humans clapped their hands against the walls of their caves *[cf. F. Eppel, p. 357 ff.]*, this produced an "image" of the hand, and this may have had magical significance—but it is not art, for the element of *artistic creation* is lacking. Not every image—then as now—is an artistic image.

When these people expanded a cave or added a windbreak, they were indeed shaping the environment, but such creations lack the element of the numinous; they are purely vital, functional, and practical in nature. Not all "building" is artistic building, even if it is functionally perfect and "skillfully executed."

In contrast, when the people of the Mousterian period painted their dead red with ochre

, we surmise (whether rightly or wrongly remains to be seen) that this act is based on the experience of the numinous character of the red color. Admittedly, the design here is conceivably primitive and lacking in artistry, yet it is a genuine precursor to the more complex and artistic painting of one's own body [*cf. A. Rust, p. 307; K. J. Narr, p. 513*] and thus a precursor to true art.

When Aurignacian people outline the rocky outcrops of their caves with a "lively" line to create the image of an animal *[cf. F. Eppel, p. 358]*, this is a primitive form of a specific kind of art. It is the seed from which the great animal paintings of the later Aurignacian and Magdalenian periods grew. And these are by no means merely mechanical "projections" of an eidetic mental image; rather, they *depict* —sometimes even exaggerating—for example, the animal's power, vitality, and movement; indeed, they may even "marry," in a truly creative sense, the animal's vitality with the rigidity and permanence of the stone. Clear distinctions can be made regarding artistic abilities, and later even "models" that are repeated *[cf. F. Eppel, p. 366]*.

When Aurignacian people project an "inner movement" onto the soft clay of a cave wall *[so-called "macaroni," cf. F. Eppel, p. 357]*, this is not yet art, nor is it a precursor to art; otherwise, every doodle we mindlessly make "in everyday life" on a notepad would already be a work of art: the element of design is missing. If, for example, they develop the serpentine lines thus created into the image of a bird by adding a "foot," they do indeed create an image, but not necessarily a work of art. This "shaping" results in a work of art only if it is created from a vivid overall mood—rooted in numinous experience—and if the translation into a "characteristic whole" is successful, for example, the depiction of the serpentine, moving, and gliding nature of a snake.

When Acheulean people chip away at the edge of a hand axe with rhythmic blows, the product is not primarily a work of art, but a tool whose form is determined first and foremost by the practical purpose it is intended to serve. Yet an artistic element is incorporated in the process, insofar as the tool's vivid character—whether massive or, conversely, delicate and refined—is consciously or unconsciously emphasized beyond what is merely functional. In modern terms, one would say in this case: the tool reveals a certain "sense of style."

When people make notches at regular intervals on a stick

, this does not necessarily constitute art: the notches may serve practical or magical purposes—and let us not forget that magic, too, is a special kind of purposeful practice, just like technical or psychological practice. But when, in doing so, they shape the numinous experience of a eurhythmic order, they create art incidentally; and when the shaping of this experience becomes the "essential," they create art as their primary focus.

When people of the late Aurignacian period make a necklace out of shells, they shape vivid characters: for example, the hanging element of the necklace in contrast to the rising line of the neck (whereas in other eras, for instance, the necklace lies close to the neck and can, as it were, interpret it as the "base of the head"). By capturing and interpreting the human body in a specific character through such design, they are quite clearly creating a work of art.

When the "sorcerer," who guards the entrance to the innermost chamber of the Trois-Frères Cave in the image, combines bear paws, a horse's tail, wolf ears, and reindeer antlers on his body, he creatively condenses and "poetically" unites the "powers" of various animal numina—undoubtedly with magical or ritual intent, but also with that artistic imagination that would later give rise to sphinxes and chimeras.

These examples may suffice to show that Goethe's concept of art clarifies many previously contentious issues, but also that the possibilities of primitive creativity are far richer and more expansive than one might suppose.

But it also contributes—and this foresight is certainly not out of place at the beginning of a "Historia mundi"—to clarifying our own situation and the many misunderstandings circulating today regarding the nature of art. Ever since "scientism" and the technology born of it have become an intellectual world power—indeed, a secular world religion—that is, for about a hundred years now—the world has become increasingly de-spiritualized. Refuges from this original experience of the world exist, in the individual, only in "dreams"—and, subjectively, at most in "feeling" with its richly saturated, immensely malleable, colorful, and always individual character—but, in society as a whole, objectively, in true art. The artist embodies an archaic, yet by no means obsolete, aspect of humanity. Through art, he creates an environment in which even this ever-vibrant, profound layer of the collective soul can move "naturally."

3.

It is only in this late world, then, that art separates itself as an isolated realm of experience and creation from the now entirely different nature of life as a whole. At the primal stage, it is woven into every aspect of life. Just as the "primitive" person—in this respect likely similar to a child—experiences the numinous in far more things than we do, and with far greater intensity and richness, so too does he unconsciously shape it almost everywhere that anything is created at all. It is precisely this that gives "primitive" creation its magnificent inner unity and certainty and fills us, who came later, with wonder and envy. Yet it is a romantic prejudice to believe, for that reason, that the "group" is the creator and bearer of art. Even then, as always, the ability to experience the numinous "creatively" and to translate it into vivid form was the "gift" of individuals who *create* art and who draw upon the potential for such experiences—present to a greater or lesser degree in the other members of the group.

This creation of art by individuals, however, would not endure if it did not—like all creative work—satisfy a very specific cultic need of the group that had become "vital" at this stage of history.

The "raison d'être" of this primitive art as art is, first and foremost, the constant evocation of the numinous. Such creations as, for example, the animal images in caves were not originally intended to have an effect on other members of the group. They do not affect humans, but rather entities or powers; they do not affect through their appearance, but through their mere existence. They were likely seen only by their creators—whom we presume to be the "shamans"—and by initiates.

Now, the evocation of "powers" can also occur through entirely unartistic objects. If *works of art* are required for this purpose, it presupposes the belief that these objects possess their efficacy and magical power only when shaped in a specific—usually "conventional"—way. Thus, for a spell to be effective, it is not enough that a certain content be spoken; rather, this content must be spoken in a specific form, with a specific rhythm, in a specific timbre, with a specific intonation, and so on, in order to unleash its magical power. Nothing may be altered—just as with a genuine work of art—without the "magic" being lost in both cases. And the same applies to the "image" that exerts its power.

However, there is another raison d'être for art within the primitive community: the communication of a numinous experience to the members of the group, the transmission through artistic expression, the "active act." Examples of this include group dance, the accompanying music, and the associated "costume." The social effect consists in a change of mood. Stifter's definition of the work of art applies fully to this second fundamental social function: "But this is the sole and only essence of the work of art, that it extinguishes every other mood in the viewer"—or in the listener and participant—"and brings forth its own." Here, the word "mood" still retains its deep, grand, ancient meaning.

With regard to their "tradition" within the community, a distinction must therefore be made between those works that, like paintings—and later buildings— *endure* materially (and Paleolithic paintings have survived for tens of thousands of years), and those that, in order to endure, must be recreated time and again and, for this to be possible, preserved in the group's "memoria": such as the forms of music, dance, "drama," and spoken and sung "art."

4.

Viewed from the perspective of artistic creations, world history is clearly divided into two world ages. The first, "prehistory"—the Paleolithic Age in terms of tools—and the preceding "Age of Wood and Bone" *[cf. H. Breuil, p. 269 ff.]*, the era of primitive hunter-gathering, lasted longer than everything that has happened since, taken together. The second encompasses everything that has come since then: the Neolithic, Bronze Age, and early Iron Age cultures; the group of great primary and secondary advanced civilizations; and also the transition to a "world culture," which the "technological age"—"our time"—seems to be ushering in.

The most general characteristic that distinguishes the art of the first world age from all art of the second is the absence of the tectonic element. Prehistory is utterly atectonic. Not only is "architecture" entirely absent, but the entire body of artistic creation—as a whole and in numerous individual features—must be understood in terms of this atectonic fundamental trait. For example, painted images have neither a smoothed, flat surface nor frames or a tectonic line of support; sculptural works have no tectonic base; and vessels have no "foot." Hidden within this negative characterization lies that positive element

of Paleolithic art, the understanding and characterization of which constitutes the primary task of art history in this epoch *[cf. F. Eppel, p. 371]*.

But just as there have always been minorities in which the new elements of the coming epoch are prepared and, in a sense, tested, so too is it in this world age. Thus, particularly in ornamentation, we see the beginnings of a pre-tectonic rational order of the plane; in the occasional axial symmetry of images, harbingers of the coming tectonic epoch, whose fundamental form will be the "farmer" in the broadest sense of the word: not only the cultivator of the field, but also the builder of houses and fences, tools and vessels, of graves, sacred roads, districts, and temples. Then the sculptural and painted image will also become tectonized, and likely dance, music, and poetry as well.

From that point on, a fruitful tension between the "sensualistic" and "noetic" elements often shapes the course of art history: all "high art" springs from this tension, and the golden ages of the "Classical" period arise from their harmonious union—a union achieved, time and again, only for a fleeting moment. Yet even in the only seemingly "abstract" art of the Neolithic period, the underlying foundation remains the experience and representation of vivid, numinous "characters"—only now new realms of the numinous are being discovered. The experience of the tectonic "order" of the world, of space, and of the human body is itself still a primal experience tinged with the numinous, and every "rational" element is absorbed and fused into the "foundation" of that original, emotionally- and physiognomically-based experience of the world, the nature of which we described at the outset. Where the rational element establishes itself autonomously, definitively detaching itself from the "endothymic" foundation, art ceases to exist. And in reaction to the rational, which has become "absolute," deliberately irrational, archaizing counter-movements emerge in defense of the archaic essence of art—movements that not infrequently draw upon the "primitive" world of dreams and prehistory in their motifs. The irreconcilable struggle between these extreme artistic movements is the defining theme of our time.

So alien does that atektonic "prehistory"—which, despite all the innovations of scientism and technology, and despite many antitectonic revolts, still rests on the foundation that emerged with the Neolithic Age—seem to us that we would prefer not to regard its creations as art. And yet they are. The history of art by no means begins—as an idealistic conception of

art would like to believe—with the tectonic-symbolist phase of the Neolithic, but with a sensualist-eidetic and mimetic phase. Just as in human beings every voluntaristic and rational "higher" element rests upon a foundation of endothymic world experience and is, as it were, encompassed by it, so too is it in the intellectual history of humanity. And yet even that mimetic art is genuine intellectual creation; otherwise, it would not be art.

5.

The question remains: in which realm of human creativity, in what form, and on what occasion did art first become "relevant" at all? This question is as difficult to answer as all questions concerning beginnings—be it the beginning of the world, the Earth, life, consciousness, or language. As with all such problems, the possibilities for empirical evidence are either nonexistent or very limited, and most of it must necessarily remain conjecture. This makes it all the more important that these conjectures be well-founded and well-thought-out, and that each specific conjecture be consistent with the body of established empirical knowledge.

Among the surviving *early* works of art, the most impressive are those of the visual arts. Yet the projected image, which detaches itself from the human being and stands before him as something independent, is certainly a relatively later development than, for example, body painting. There is good reason to suppose that, before creating pictorial works, humans "formed" entities from their environment—especially animals (and later spirits)—using their own bodies, through gestures and facial expressions, body painting, and adornment *[cf. W. Schmidt, p. 450 ff.]*. And this assumption can be expanded into the broader notion that the translation of experienced numinous "characters" into vivid figures—which we have recognized as the very essence of art—took place first and foremost through the medium of the human body with its manifold expressive possibilities. Here, in the sphere of the human body, and in close symbiosis, not only did dance first emerge—which is the hardest to separate from the human body (the dance of marionettes!)—but also music and "poetry," the representational and decorative arts, painting, and ornamentation. Vocal music is older than instrumental music; the painting of one's own body is older than the painting of rocks; and the adornment and "ornamentation" of one's own body is likely older than that of objects. Which of the arts, of course, took the lead in the emergence of art—whether vocal music, as the Greeks believed

believed, poetry or "ornament"—remains for us just as much a contested mystery as it was for the art theorists of the Renaissance.

Finally, there is good reason to suppose that even the earliest art found expression on certain occasions important to the group, occasions in which the experience of life reaches its highest point—transcending everyday life—yet at the same time resolves itself: these two moments, ecstasy and catharsis, belong to every expression of art, just as exhalation and inhalation do. These are the events that, at a higher level, will give rise to celebration and festivity.

So while we may not yet have answers to the problem of the origins of art, we do have questions of the utmost interest. And these questions are taking on increasingly definite forms, and methods are beginning to emerge through which they might be answered. And because experience shows that unresolved problems of this magnitude do not allow the human mind to rest, it is perhaps not too bold to expect that, once the positive foundations have been secured, the energy of research might turn more strongly than before to these questions, which can never be clarified by new discoveries alone.

THE ART OF THE EARLY AND MIDDLE STONE AGE

BY FRANZ EPPEL

Far more than the visual arts of any other era, those of the Paleolithic demand that the viewer adopt an attitude commensurate with their very nature. For, first of all, Paleolithic artworks are alien to modern humans, as they belong to a world from a time tens of thousands of years ago. At that time, however, the sole purpose of art was not to decorate or to evoke aesthetic pleasure, but to serve magic and ritual. The question arises as to whether it is even possible—and, if so, by what means and to what extent—to approach and penetrate Paleolithic art through observation and concepts *[cf. K. J. Narr, p. 519]*.

On the one hand, every representational work of art affects the viewer through the *content of the depiction*. For the viewer who limits himself to this, the value of the artwork lies in the full exploration of its historical factual content. On the other hand, however, every work of art can become a source of knowledge in and of itself—that is, as *a shaped object in and of itself*. In that case, however, it depends on the means by which this content was shaped. Only within this art-historical perspective is the work of art elevated to the status of *the* actual, *primary object of research*. Only through this method can specific characteristics be identified, examined, and interpreted, and can one approach the structure of Ice Age intellectual life. It is only from this holistic context that the path to *understanding* and to an appropriate appreciation of the facts—which until now have merely been stated—opens up.

In the second half of the 19th century, the discoveries of Paleolithic art sparked a heated debate. After a brief flurry of sensationalist newspaper reports, the first statements from competent scholars followed: they flatly rejected the Paleolithic age of the images and declared some of them to be recent forgeries. Some scholars suspiciously voiced the suspicion that this was a ruse by the clergy, who sought to use such forgeries to prove the perfection of “early humanity.” Thus, a priori evolutionism—which deemed such perfect works of art impossible at such an early, “primitive” stage—had triumphed for the time being.

In the case of wall paintings, one can often determine the relative age of the painting periods by examining overpaintings and palimpsests. But it was rare for parts of a sculpture or a painted or engraved cave wall to crumble or collapse shortly after the artwork’s creation, thereby ending up in a cultural layer whose other finds (tools) provided evidence of the cultural and thus also chronological

attribution. However, once archaeologists learned to excavate cultural layers with expertise, they also found images scratched onto bones or sculptures within them, which could be easily dated based on the tools found alongside them, leaving no room for doubt regarding their age. But it was not until 1902 that the decision was made to make the long-overdue, official correction to this scientific misjudgment. Since then, a well-established chronology of the development of Paleolithic art has been established through scholarly research.

Finally, any consideration of Paleolithic art must not overlook the fact that *tools*, too, possess elements of aesthetic and artistic form. While these elements were not in and of themselves decisive for the creation of an artifact, they must nevertheless have existed secondarily—psychologically, through the effect of the shaped object on the human mind, arousing a sense of beauty. The beauty of the line, the surface, or the well-proportioned nature of a worked three-dimensional or spatial form; the spatial organizing principles of regularity; symmetry; regularity; balance; rhythmic arrangement; and so on are just a few of the most important, decisive factors. It is striking, for example, that Acheulean hand axes conform to recurring proportions. One could speak here of a preliminary stage or, at best, an early stage of aesthetic sensibility. In addition, Paleolithic humans certainly also used wood as a material [*cf. H. Breuil, p. 269 ff., A. Rust, p. 289*], but its rapid decay completely removes these objects from the historical record. There must also have been works of fine art that were carved from wood.

The surviving Paleolithic artworks from Eurasia are divided into two groups based on style and geographical distribution. The most significant finds, and those first to come to light, are located in southern France and northern Spain, which is why they were called *the "Franco-Cantabrian group."* However, finds from Central and Eastern Europe and Asia—such as the "Venus figurines" found as far as Siberia—also share the same stylistic characteristics.

The second group is not on an equal footing with the first. It is of more recent origin, consists exclusively of paintings, and is geographically limited to eastern Spain (the Spanish Levante). This led to the designation*"Eastern Spanish Group*." Its distinctive style is easily distinguished from that of the Franco-Cantabrian group. African rock paintings, formerly described simply as Paleolithic, originate in part from more recent epochs [*see K. J. Narry, p. 506*].

I. THE FRANCO-CANTABRIAN GROUP

The oldest works of visual art date from the *Aurignacian [sensu lato]*. These include curved lines and clusters of lines that humans drew or scratched with their fingers into the clay-rich walls of caves (so-called "macaroni"). These lines meander in undulating patterns across the cave walls in chaotic layers of strokes. However,

such human expressions be regarded as *pre-artistic*; they have also been interpreted as mere doodles, as primitive expressions of the play instinct. In the *earliest representational drawings*, a head was first added to the clustered lines, followed by eyes, legs, and a tail, resulting in the simplest depictions of animals— *linear outline drawings* that contain only the most essential elements of a detailed drawing.

The beginnings of *colored depictions* can still be found in the Middle Aurignacian. Earth pigments, blood, or charred wood mixed with egg white or fat produced white, yellow, red, or black pigments. These were used to paint simple outline drawings, primarily of mammoths and bison. Artists utilized existing rock outcrops to depict the massive, heavy bodies by drawing the contour lines around them to define their shapes. These animals are always depicted strictly in profile; from the body—in which the center of gravity clearly rests—the legs—usually two or even four legs arranged one behind the other without overlapping in space—appear to hang down as if attached. The depictions always convey the impression of a calm, static state without any sign of movement.

Outstanding works of *relief and free-standing sculpture* also emerged as early as the Aurignacian period. For example, at Stetten ob Lontal (Germany), a number of animal depictions were found that had been carved and scraped from ivory plates in *bas-relief*: bison, horses, cave lions, and cave panthers. These small relief images, too, are characterized above all by a precise, continuous outline, complemented by a more subtle internal relief. This contour—which at times, as in the case of the wild horse, leaps boldly upward and flows nimbly around the slender figure, or at other times (as with the bison) rears up in a heavier, clumsier, yet powerfully arched manner—characterizes the respective animal species with ingenious precision.

In addition to these relief sculptures, which always depict a single animal, several *three-dimensional animal figures* were also found. These, too, were carved from ivory (from mammoth tusks) or bone using a "destructive technique" (M. Hoernes), in which material was scraped away from the core of the block until only the finished piece remained. The unique finds of animal and human figures, molded from clay and fired, come from Unter-Wisternitz (Moravia). Time and again, the continuous line—the contour par excellence—is decisive in the form.

The so-called *"Venus statuettes"* of the Aurignacian *[sensu lato]*, of which a large number (about 130) are now known, exhibit the same technique; these

are mostly made of ivory, but also of limestone and even serpentine, carved and scraped from the core of the material. These finds are distributed across southern France, northern Italy, Central Europe, and Russia as far as Siberia. Most depict an obese woman with a massive body, heavy, sagging breasts, and a small, faceless head. Strikingly, the feet are always missing, and the legs taper to a point, so that the figure could only be laid down or stuck into the ground. The oldest figures—and those most closely resembling today's ideal of beauty—were excavated—unfortunately only as torsos—in Brasempouy, France. They are—likely as a result of their naturalistic depiction—plump and voluptuous, whereas in the increasingly stylized figures of later periods, the breasts, abdomen, and buttocks were rendered as perfectly spherical (Lespugue, France).

From the Aurignacian period, there are also figures in *bas-relief*—though much rarer than the fully sculpted female figures—that were carved and scraped into limestone. The best-known relief depictions of humans come from the Abri Laussel in the Dordogne: all figures are depicted strictly en face. The bodies of the female figures are extremely obese, with protruding hips and heavy, excessively developed sagging breasts. One woman holds a bison antler decorated with notches in her right hand. Another, slender figure—that of a man or a girl—wears a belt around her waist and holds both arms outstretched away from her body. The head and feet are missing. Based on its posture, the figure has also been interpreted as a javelin thrower. – A bas-relief barely 20 cm high depicts two human figures who—like images on playing cards—converge in the center from above and below. It represents either the birth of a child from an open womb or sexual intercourse.

The *ornamentation* of the Aurignacian *[sensu lato]* is sparse in formal elements. Simple, parallel notches were cut at regular intervals into bone sticks, giving them a dividing, rhythmic character. Similarly, dots were incised in straight or U-shaped curved rows, sometimes in two parallel rows, creating simple "dotted" bands. Patterns of paired notches at equal intervals are particularly interesting because they represent stylized expressions of a rhythmic beat (II-II-II). However, the ornaments always lack a defined conclusion, a beginning, and an end. The decorated "field" must lack a defined border because the objects are always ornate, three-dimensional (mostly cylindrical or conical) forms.

If one surveys the art of this period according to the individual groups described above, a specific

characteristic. To derive this solely from technological constraints would be one-sided, because it overlooks the fact that humans often selected the relevant materials themselves after long and complicated preparations and used them to adequately express their preexisting ideas.

The situation is fundamentally different with finds that have hitherto been unquestioningly classified as prehistoric art: handprints—or rather, hand stencils—in red or black pigment have been discovered in caves in northern Spain and southern France. They are usually found side by side on the cave wall or above or below painted images. In addition to "positive" impressions, there are also "negative" impressions, in which paint was brushed or splashed around the hand—held against the cave wall like a stencil—so that the silhouette of the hand remained as an unpainted area within the resulting patch of color. These hand marks have a strongly emotional impact. However, these formations cannot be described as artistic creations. Compared to the works of art of their era, their absolute dissimilarity is just as striking as the impossibility of classifying or comparing them stylistically. In this, a non-artistic, non-artistically designed element becomes apparent.

Jewelry that arose from the desire for a functional interpretation of the body—of which body painting is the most striking example—has already been found in many places. It consisted of shells or carved bones strung together to form necklaces. By combining necklaces arranged side by side and linked together, shell caps were created as headdresses. Strings of shells also served as bracelets *[see A. Rust, p. 307]*.

If one considers the nature of Aurignacian art as a whole, at those stages where it has not yet attained the status of a fully-fledged work of art, it is "a sign of heightened motor, formative, or mechanical-representational activity" (G. Kraft). In a work of art, however, there always appears a character that is concentrated on the individual, self-contained, outwardly self-contained essence and is strongly determined by emotion. The design is therefore executed as a fully independent sculpture, almost always unrelated to its surroundings. A composition into a scene is ruled out here.

It clearly illustrates the nature of this figurative art to show the few subject matters on which it focused: among human figures, almost exclusively the female—who often recognizably bears the seed of procreation within her—was depicted. Perhaps this referred to a fertility idol, a "Magna Mater," or Earth Mother, or perhaps it referred to "Penates," which were placed along the walls of huts [cf. K. J. Narr, p. 520]. – Of the animals, only those of hunting interest were depicted, primarily mammoths, bison, and cave bears.

These creatures were shaped as "lifelike" as possible, as if they were in

the cold, “dead” stone. The imagination, recognizing the outline of an animal in a rock outcrop, might have led to the notion of seeing here a captured animal—one not yet born or one already killed. The character of the inorganic rock and the organic substance of the blood-red pigment—the “dead” rock and the “living” depiction—might, where the two meet, symbolize the clashing spheres of death and life. At that threshold, they were to be governed by magical action: from there, the resurrection from death to life—in fertility magic—or the casting out from life into death—in killing magic—could be understood only as two “directions” of the same mindset.

The finds from the *Solutrean* cultural phase, which followed the Aurignacian, yielded only a few works of art, which, moreover, are almost exclusively confined to France.

The most significant are the *reliefs* carved in limestone. At Le Roc (Charente), several images of bison and wild horses are carved in relief approximately 5 cm high on stone slabs measuring about 1/2 to 11/2 m in size. This remarkable sculptural work must have been accomplished by bossage using a sturdy flint core (nucleus) as a chisel. The initial rough bossage would then have been refined with blades and scrapers, the contours deepened, the body relief sculpted plastically on the surface, and finally smoothed. These slabs were once arranged in a large semicircle beneath a rock overhang to form a long frieze; nevertheless, they lack any thematic or narrative connection. The Abri Cap Blanc (Dordogne) features a 12-meter-long “gallery” of similar relief images beneath a small, overhanging rock roof. The animal images, 1½ to 2½ meters long and carved into the rock face, overlap in some cases haphazardly, so that here, too, any narrative connection is absent. A burial immediately beneath the images could indicate the heightened significance of this site.

Ornamental decoration took on greater significance. On narrow, delicate, flattened, or often finely faceted bone rods, fine incised lines were carved inward from the outline. In general, these small incisions are very thin and delicately engraved; only occasionally do they take on a chunkier, wedge-shaped form, so that when arranged in a row, they resemble a row of teeth or a saw blade. – Small notches were (as in the Aurignacian) arranged in crossed pairs or at an angle (in an X- or V-shape), creating a more varied rhythm. Most often, the notches run all the way around the entire decorated surface or are

laid across it, resulting in a simple filling of the surface. The purpose of these small decorated bone plates and sticks is indicated by the fine eyelet drilled at one end, which apparently served to fasten the object. It can therefore be assumed that these objects were worn as amulets and that even the notches that appear purely decorative had an inherent meaning.

The artistic development of the Solutrean period brought new, characteristic artistic possibilities, especially in contrast to the preceding Aurignacian period. In the large animal depictions, three-dimensional sculpture appears for the first time to have been restrained within the more subdued *stone relief*, and thus sculptural form appears (for the first time) both alongside and within the surface. The flattened animal bodies seem tightly constrained between the outlines anchored in the background. Thus, the effect of the contour now stands on equal footing with the finely modeled surface of the images.

The *ornaments* dominated the surface from the outer edge. The notches running all around have the character of coarse, uniformly firm stitches that seem to tighten the surface stretched between them. — Overall, the “style” of the Solutrean is defined by the stretched surface, constrained between the sharp contour lines.

A group of finds *consisting of ornamental incised drawings* from eastern Central Europe dates to approximately the same period [*cf. A: Rust, p. 299*]. The best-known find among them is the so-called Venus of Předmost: an ornamentally stylized image of a female figure is incised in a fine, sharp engraving on the cylindrical surface of a mammoth tusk. A spherically curved triangle forms the head; thin ladder-like ridges represent the eyes, nose, and mouth; oval loops depict the breasts and abdomen; and vertical bundles of lines form the legs. Small herringbone patterns and hatching decorate parts of the body (tattoos?). At the same site, delicate herringbone-like hatching patterns covering the entire surface were found, also engraved on mammoth tusks.

Small, square ivory plaques (made from mammoth tusk) from Eastern Europe (Mezin) bear the oldest meander patterns executed in a fine incised technique. Other plaques are covered with zigzag lines arranged parallel to one another. The identical shape and size of all these plaques, along with their slight inward curvature, suggest they were components of a bracelet. – From the same site come peculiar three-dimensional ivory objects whose entire surface is covered with meander patterns and zigzag lines in hair-fine incisions.

These types of decoration, too, already fully dominate the surface—

in continuous, (as yet) unbroken, (but already) angled lines—simple in their zigzag breaks, complex in their meandering patterns; yet even the meander consists of an unbroken line that intertwines, separates, and continues onward.

Most examples of Paleolithic art date from the *Magdalenian period.*

The major works of *sculptural art* are known from the caves of the Pyrenees. In Tuc d'Audoubert (Ariège), 700 meters deep inside the mountain, in the middle of a large cave chamber, two bison figures, approximately 60 cm long and molded from clay, were discovered; they are rendered in nearly full relief and placed in front of a small group of stones. The two clay figures depict, in lifelike detail, a female bison, with a male bison behind her in the act of mounting her. The clay floor around the group of animals revealed, through sintering, footprints—still preserved as if fresh—from the heel-to-toe gait (a dance-like gait?) of younger human individuals. In the Montespan Cave (Ariège), clay sculptures of felids and a bear were found. The figures, approximately 1 m long and nearly as tall, are sculpted in the round but lack heads. The bear's neck bears the puncture mark of a stick, and skeletal remains of a real bear skull were found between the front paws of the sculpture. It therefore appears that a real head had been attached to the clay model. The powerfully modeled bodies of these sculptures are covered with puncture wounds.

To date, a vast number *of small sculptures* carved from bone have come to light. They are, by their very nature, small in size, but represent an incomparably high level of artistry in the imitative reproduction of nature. A horse's head from Mas d'Azil (Pyrenees), approximately 5 cm long and carved from bone using flint tools, has been rightly compared to a sculpture from the Parthenon. Through the finest chiseling, even the hairs of the mane, the eyes, and even small skin folds are delicately rendered. Another small sculpture from the same site depicts only the skeletal remains of a horse's skull, without skin or flesh. Could this be an "anatomical study" based on the skull of a butchered animal?

The *"decoupées,"* found in large numbers , represent a hybrid between sculpture and simple incised drawings. These are small bone plates on which animal heads were drawn and then cut out along their contours. Such plates were usually strung together and worn as amulets.

Even more common are the fine-lined *engravings* etched into *bone* using flint. Time and again, they depict reindeer, bison, and wild horses; less frequently, mammoths, musk oxen, rhinoceroses, and cave-

lions, seals, wolves, wolverines, moose, deer, ibex, saiga antelopes, and even snakes, fish, and birds. Depictions of humans occur only very sporadically. – What is particularly astonishing is how these drawings are executed with such apparent ease using fine, light strokes. Delicate hatching meticulously renders fur or scales, and even skin folds and shadows are hinted at. Whether standing, grazing, walking, running, or jumping, the most fleeting movements are often captured, suggesting that intensive observation and study of live animals were necessary to achieve such precise knowledge of their anatomy and movements.

Drawings of this very same nature were also carved into limestone. *Limestone slabs* excavated at Limeuil depict deer, horses, ibex, and other animals in perfectly proportioned drawings. In some of the images, one can see how they gradually attained the "correct"—that is, lifelike—form through repeated corrections. In the case of animals with six, eight, or ten legs, one gets the impression that the artist intended to depict movement—the run broken down into individual phases, much like in a film—through these various poses. A keen sense of the dynamics of bodily movement is expressed in these images. Or were these limestone slabs perhaps "sketch sheets" for the artist who was learning and practicing?

Engravings were also carved into the cave *walls* using sharp flint styluses, often cut deeply into the rock. Such engravings also served as preliminary sketches for painted murals. Once again, animals were almost always depicted. The most impressive of the few human depictions were discovered in the Marsoulas Cave (on the Garonne) and in Angles-sur-l'Anglin (Vienne). The human heads have mask-like features, large, empty eyes, a prominent hooked nose, and a long, shaggy beard. Compared to the countless, exquisite depictions of animals, the portrayal of the human face—which lags far behind both in quantity and artistic quality—is highly striking.

The hidden location of such images deep within the cave passages, usually in deliberately inaccessible spots, is mysterious. This, too, indicates that they could not have been intended as decoration for the cave walls, but that they certainly held magical and ritual significance.

The colored wall paintings undoubtedly represent the artistic pinnacle of the Paleolithic. The character of the simple, monochromatic outline had changed significantly since the Aurignacian. The hard, austere lines gave way in the Magdalenian to light, often contrasting, and frequently

light, sketch-like lines that extended deep into the interior of the figure.

The monochromatic *linear wall paintings* seem to be most closely related to the engraved images. Using this technique, for example, the main frieze in the cave dome of Niaux (Ariège)—painted 770 meters deep inside the mountain—combines bison, wild horses, and ibexes with a highly lifelike expression. The delicacy and softness of the fur, the bushy nature of the mane, are perfectly expressed through the painterly quality of the lines. Going far beyond mere imitation, these expressive qualities are enhanced by the extraordinary versatility of the colored line. Spearheads or arrowheads are painted on the animals' bodies, a practice through which people believed they could magically bring that game under their control. The more faithfully the depiction reproduced the visual reality, the more successful this magical act was believed to be.

The Lascaux Cave (Dordogne), discovered in 1940, contains the most beautiful *large-scale paintings*. From the floor up to the vaulted ceiling, wild horses, bovids (up to 5½ m in length), cervids, and others were *painted* in vivid red, brown, and deep black, sometimes as outlines but mostly as solid areas of color. Genealogically, these paintings predate the Magdalenian period, which explains both the lack of detail in the monochromatic surfaces and the still-unfinished, experimental quest for perfection evident in the figures of this "pre-classical" phase, which sometimes appear clumsy and heavy.

At the classic site of *polychrome paintings* from the Upper Magdalenian period, in Altamira, northern Spain, the rock outcrops on the ceiling of a large cave chamber—only 1½ m high—are painted. Several bison—some crouching as if lying down (sleeping or pregnant) and others standing—along with a few wild horses, a doe with her head raised, and a running wild boar were outlined on the smoothed rock ceiling in artistically refined, hair-thin engravings and painted partly in powerfully luminous, impasto colors and partly in nuanced, translucent shades. Pinned to the lifeless, cold rock, the massive animal bodies hang from the low ceiling. The sight of them vividly brings the experience of weight to the viewer's consciousness.

In the case of an animal that turns its head to look back, a second spatial layer comes to the fore in front of the body; the turned-back head obscures part of the body, creating "perspectival" overlaps. The highest artistic level of *spatial perspective* was achieved in some delicate incised drawings (Gourdan, Haute-Garonne), in which animals are even depicted in direct frontal or rear-

view, while the anatomical proportions were nevertheless flawlessly rendered.

By depicting an animal in heat following another, or a human creeping up on an animal's trail, or by placing a man and a woman within the same pictorial context, two pictorial elements were brought so close together—both formally and in terms of content—that they engaged in an interaction with one another. However, even to illustrate these *"proto-scenic" relationships* between two pictorial elements, a certain sense of space is already required, similar to that in the aforementioned, contemporary perspective depictions.

Magdalenian *ornamentation* features rich, highly variable forms. Simple rows of hatching were joined by rows and crosses of notches, incised triangles, quadrilaterals (often including rhombuses with internal grids), and varied motifs arranged in a tapestry-like pattern. Small bone sticks found in a limited area (north of the Pyrenees) feature notched spirals, circles, and wavy, rocaille-like flourishes all around their entire surface: a highly dynamic, painterly, and deeply three-dimensional ornamentation.

A group *of* peculiar ornamental *symbols* deserves special attention: above painted or incised depictions of animals, tent- or roof-shaped symbols were painted or incised in straight lines and filled inside with a few horizontal and vertical lines. These symbols can also resemble combs, ladders, rectangular grids, or nets; combinations also occur, such as more heavily drawn longitudinal rectangular grids with a fine mesh filling, etc. They could refer to net traps, pitfall traps camouflaged by poles, gravity traps, or even dwellings. Circular or oval loops are believed to represent game fences, game gates, and hunting enclosures.

The countless works of art from the Magdalenian period, discovered in a wide variety of contexts, allow us to draw conclusions about their social function and that of their creators to a greater extent than those from preceding eras. If we accept the circumstances of the discoveries as evidence of their magical-ritual significance, the artist would necessarily have held a high status. The outstanding artistic talent of these people alone must have set them apart from the rest. Furthermore, stylistic analysis reveals the presence of one and the same "master" at various sites. The difficult access to the caves proves that they were not always accessible to the general public, but rather only to a select few and on specific occasions.

Regarding the art of the period, which was apparently brief compared to the Magdalenian

and artistically insignificant *Azilian period* —which likely already belonged to the Mesolithic—there are only a few finds, though they are, of course, very characteristic in their own right. **The best known are the painted pebbles from the river cave at Mas d'Azil (Pyrenees).** Various simple symbols were painted in red—a color mixed from blood and fat—onto flat, roundish to elongated-oval, light-gray river pebbles. The most common are broad, parallel stripes laid across the pebbles. Other stones feature up to nine pea-sized red discs arranged side by side, or longitudinal bars; some have up to three cross-shaped arms, forming lattice-like motifs, and so on. Angled, broad bands in V- or U-shapes, when joined together, form a zigzag, wavy, or crenellated pattern.

It is doubtful whether any of these symbols have a representational meaning. The symbols on the Mas d'Azil pebbles are thought to depict highly stylized images of human figures.

What stands out at first glance is the unusual material used for the paintings: rather than the large, contiguous rock surfaces of a cave or rock shelter, the artists painted on small, self-contained, hard pebbles; it is as if the images had contracted onto small islands. The recurring symbols are also limited to just a few types. Finally, this concentration —both formal and, presumably, thematic—is also reflected in the phenomenon of such consummate stylization that the originally intended subject can no longer be recognized by mere observation of the symbol. What is decisive for this phase of the Azilian culture is no longer the sensually perceptible world of phenomena, but rather what is consciously recognized from it and intended through knowledge.

Fitting into this conceptual framework is the fact that the large collection of painted pebbles makes the Mas d'Azil cave appear to be a place of worship, a cult grotto.

II. THE EASTERN SPANISH GROUP

Its sites stretch across a broad strip of land from the Pyrenees southward, along the eastern coast of Spain (the Spanish Levante), and sporadically as far as the Gulf of Cádiz. Just as in its geographical distribution, this art can also be clearly distinguished stylistically from that of the Franco-Cantabrian circle. However, the dating of the sculptures discovered here is still not entirely clear, since the direct stratigraphic connection of the works—which are always painted on rock overhangs—

images—which are always painted on rock overhangs—with archaeological strata is lacking. Nevertheless, details such as the depicted fauna and the overall character of this art suggest that its origins lie in the late Upper Paleolithic, even though its final phases extend into the Neolithic.

The images from eastern Spain always feature figures painted over their entire surface in a single color—black, brown, red, or yellow. "Polychromy" occurs only exceptionally, e.g., when black legs are added to bodies painted red. Otherwise, monochromaticity is the strict rule, so that the presence of different shades of color indicates, at first glance, different painters and, in most cases, different painting periods.

In Alpera (Albacete), on a massive, overhanging rock roof, there is an exposed, 7-meter-long frieze depicting dynamic hunting scenes. The oldest are painted in red, later ones in reddish-brown, and the most recent—certainly Neolithic—depict highly stylized human figures in bright red, some of which consist of nothing more than a simple cross or a line with three crossbars. In densely packed group scenes, archers armed with bows and arrows hunt deer, some of which have already been struck by fatal arrows. A massive human figure in the center of the frieze, with long hair or a headdress, extends one hand to hand out arrows, while in the other she holds a stylus (or an arrow?), with which she draws (or touches?) an image of a stag that is strikingly rendered only in outline. This could represent a magical ritual. The numerous depictions of ibex, deer, moose, cattle, etc., are carefully and finely executed, with delicately supple, sharply contoured outlines and uniform shading of the bodies in a single shade. The legs are drawn very thinly, which lends them a particularly graceful gait in high-quality images but a wooden stiffness in works of lesser quality. Chronologically older and younger images overlap haphazardly.

The most striking feature of the figures in the eastern Spanish style is their posture: the archers lean their sinewy, slender upper bodies forward, spreading their arms wide forward and backward to draw the bow taut. The legs lend the body extraordinary mobility: in wide-reaching, running, leaping, and creeping poses, the bold hunters are depicted on the hunt or in ecstatic contortions during exuberant dance. All these wildly animated figures possess a supreme zest for life, which is aptly expressed in the paintings rendered with apparently swift, concise brushstrokes.

In the depiction of the battle scene, this hunting art reaches its

greatest achievements, the most interesting of which is found at Morella la Vella (Castellón). What a concentration of power is spontaneously unleashed on that small surface, measuring only a few square centimeters! The men, painted in narrow strokes, are armed with bows and arrows; their long limbs, as thin as spider legs, are stretched to the limit as they run and leap, thrusting toward the center like spears. There, the seven warriors collide with one another from all sides, like narrow, pointed wedges.

From the Araña Cave near Bicorp (Valencia) comes a depiction of two honey gatherers. They are climbing up ropes toward a high rocky ledge, from which wild bees swarm angrily around one of the two men as he seizes the honeycombs, which he collects in a basket.

Noteworthy is the so-called “execution scene” from Cova Remigia (Castellón): at the top (i.e., in the background) stand ten men holding their bows and arrows aloft, ready to shoot; at the bottom (i.e., in the foreground) lies a man whose body has already been pierced by many arrows.

Various elements of traditional dress are clearly visible: men are sometimes clad in knee-length trousers (Cueva dels Secans), and on their calves they often wear bands that are either part of their footwear or represent a war or hunting insignia. Women wear long bell-shaped skirts, as shown in images from the Alpera frieze, from Minateda, and a (dance?) group of nine women from Cogul.

Artistically, these images exhibit a very specific uniformity that remains consistent even amid the diversity of depictions. While in the Franco-Cantabrian region depictions of animals took precedence over the few human figures, in eastern Spain the human figure is the active, dominant element. Whereas the figures in Franco-Cantabrian art are usually shown at rest or in simple poses, eastern Spanish painting focuses primarily on expressing spontaneous movements. This is where its unique, incomparable strength and impact lie. The technical methods also differ in both cases: incised drawing, which is predominantly practiced in the Franco-Cantabrian region, is entirely absent in eastern Spain, and sculpture is also completely lacking here. But even in painting, the formal techniques employed are fundamentally different: the art of Franco-Cantabria developed a well-thought-out polychromy for graphic modeling, whereas the vibrant art of eastern Spain was painted in monochrome. While the images there are usually hidden deep inside caves, here the paintings are clearly visible on large, overhanging rock faces.

The paintings, openly exposed and accessible to everyone at all times

certainly had a very different purpose to fulfill than the mysterious Franco-Cantabrian pictorial art. Evidence of a magical-cultic significance could hardly be established for the art of eastern Spain, whereas, on the other hand, the theory of pure creation driven by the joy of representation (e.g., as an account of a successful hunt) is more plausible.

The artistic essence of this painting lies in the consummate transformation of all physical elements into pure plane, even though this plane is sometimes intended to be spatial. This is the case in the battle scene described, where the directions of movement from top to bottom can only be interpreted as background and foreground. The same applies to the execution scene, where the upper strip apparently represents the background and the lower strip the foreground.

Other paintings in the eastern Spanish style were created later, mostly in disregard of these earlier works. At the beginning of the long development that followed, heads are painted merely as round spots, arms—without any hint of a shoulder—as straight, protruding lines, and legs as elongated, thin lines. These rigid figures seem to be composed of toothpicks, blades of grass, and needles. Movement is abandoned; life seems to have been sucked out of these withered figures. This expresses what is inherent in the developmental course of all two-dimensional art: as soon as movement within the plane subsides, the figures begin to freeze within it.

The next epoch produced figures that can no longer be said to have a representational character; they are almost mere symbols. Thus, a vertical bar with a crossbar might represent a person with outstretched arms; with two crossbars, it might still be interpreted as a figure with outstretched arms and legs spread apart. A vertical stripe with three or more—up to thirty—transverse arms, however, can no longer be interpreted from a mere visual inspection. Later, schematic symbols such as circles, arrow-shaped lines, sun or flower patterns, and so on, appear. These abbreviations likely date back to the early Neolithic period and are intended only for those who know their meaning—those who know how to “read” them.

Thus, over the course of the Upper Paleolithic, a clearly discernible *development* of figurative art takes place, from the Aurignacian through the Solutrean and Magdalenian to the early Mesolithic Azilian. It is a transition from linear to two-dimensional structure, during which “underlying trends” become apparent, such as the dominant linearism in the Aurignacian (from the dot to the moving dot to the line and from there to the outline image), the two-dimensional relief-based approach in the Solutrean, and the

spatial conception in the Magdalenian, which leads to the dissolution of three-dimensional form, to "Impressionism." Following this "painterly" loosening, the Azilian at the beginning of the Mesolithic marks a return to strict consolidation within the plane, and the formerly pictorial content solidifies into pictorial symbols.

Thus, even in humanity's earliest figurative art, one can observe developmental phenomena such as those found in all other epochs of genuine art. This proves, however, that this earliest art is not an "unconscious expression of instinct" or merely a mechanical reproduction of a visual retinal image, but rather, from the very beginning, a genuine manifestation of the artistic—one that is masterful through both innate talent and acquired skill.

LIVING PEOPLES AS THE REMAINS OF THE OLDEST PEOPLES AND CULTURES

THE PRIMITIVE CULTURES:
THE EARLY HUNTING-AND-GATHERING STAGE

BY P. W. SCHMIDT

I. INTRODUCTION TO THE TASK AND METHOD OVERVIEW

1. ETHNOLOGY IN SHEDDING LIGHT ON THE EARLIEST HISTORY OF HUMANITY

a. CULTURAL-HISTORICAL ETHNOLOGY

Ethnology (the study of peoples) believes [it] has matured and is equipped with sound historical methods to write a "Historia Mundi" not only for the earliest human groups and peoples but also for the periods that followed them—a history in which events are not merely strung together superficially, but rather the causal influence of earlier groups on later ones, the migrations into regions with different natural environments, and the resulting interactions between the individual groups are depicted, so that the true history of humanity—in its far-reaching spread and throughout the various eras—can be written here as well, despite the complete lack of written documents *[see also O. Menghin, p. 246 ff.]*. The individual primitive peoples scattered across the entire earth, in the diversity of their customs and traditions, present views and opinions that serve as the pages on which history has been inscribed; and it now depends solely on determining the correct sequence of these pages in order to be able to read, from the resulting book, the history of these oldest, middle, and more recent peoples in the succession of their cultures.

However, the difficulty lies precisely in determining the correct sequence of these pages, and here, over the course of decades, ethnology has established a sequence of these pages that has caused a grave distortion of human history.

As early as the end of the 18th and the beginning of the 19th centuries, the idea of progressive evolutionism had crept into the portrayal of human cultural history, positing a development that, albeit with fluctuations and setbacks, steadily marches forward

of human culture. This idea received a tremendous boost when, around the middle of the 19th century, Darwin extended it to the plant and animal worlds, and Huxley applied it to the origin of humankind, which, through its descent from higher animal species, was a product of evolution from the very beginning. At that time, when no funds were yet being allocated to the study of various primitive tribes—though they were being spent to advance botany and zoology—it was natural scientists and physicians who first undertook the study of humankind as a sideline, but then, as they became increasingly enthusiastic about their new task, pursued it as their primary occupation. As natural scientists, they applied scientific methods to ethnology, which is, in its very essence, a humanities discipline—specifically, a historical science. When they further introduced evolutionism, reinforced by the natural sciences, into ethnology, they caused serious damage to the discipline, which, following these erroneous paths, could offer only a severely distorted account of human history.

This distortion lay primarily in the fact that, building on the idea of humanity's animal origins, the earliest stages of human development were a priori portrayed as being as animal-like and primitive as possible, from which the higher stages of culture were said to have emerged only gradually through a laborious process of development.

From this, a measure of time was derived: that everything lowly and animal-like was old, and everything lofty and spiritual was young. This includes the theories of sexual promiscuity, which is said to have prevailed in the beginning, from which—through the stages of group marriage, the Punalua family, and polygamy—monogamous individual marriage developed only very late; furthermore, the doctrine of primitive communism, from which individual property emerged only through all manner of abuses. Such and similar theories dominated ethnology for decades. They gained even wider circulation when Friedrich Engels, Karl Marx's comrade-in-arms, adopted them following Lewis H. Morgan's research. The numerous editions of his book made these theories widely known, particularly in socialist workers' circles.

Even though, in individual cases, more comprehensive and better-documented collections of facts—such as, in particular, the works of F. Westermarck—had already refuted some of the theories of that earlier period, the foundation remained flawed and led to erroneous doctrines as long as ethnology had not abandoned the natural-scientific method and adopted the humanities-based one—

. The credit for paving the way for ethnology toward the historical method in Germany goes to Fr. Ratzel (1887 ff.) and L. Frobenius (1898 ff.); it was further developed through the seminal research of Fr. Graebner and B. Ankermann (1904 ff.), who were soon joined by W. Foy and W. Schmidt (1913). Subsequently, a long line of researchers followed in their footsteps. As early as 1911, Fr. Graebner published a textbook on the "Method of Ethnology," which he modeled after E. Bernheim's well-known "Textbook on the Historical Method and the Philosophy of History." However, he goes far beyond the approach to history presented there—which relies on written documents—since the earliest peoples studied by ethnology had not yet developed writing. He therefore calls his method the "cultural-historical method," because it derives history from the changes in the cultural elements themselves.

The German and Austrian group representing this new research direction was further strengthened and gained a head start when, in 1931, O. Menghin applied the cultural-historical approach to prehistory as well. The influence of this group was further enhanced by D. M. Wölfel's historicization of physical anthropology, for which V. Lebzelter had already laid a solid foundation.

Even in folklore—which had long been content with so-called psychological interpretation—the historical approach has made a breakthrough, in some cases even with explicit recognition of the cultural-historical method, as exemplified by Br. Schier.

b. OTHER HISTORICALLY ORIENTED MOVEMENTS IN ETHNOLOGY

In North America, the historical approach was established early on by F. Boas. Since he had entire generations of direct and indirect students, this historical approach was passed on to a long line of researchers who later became prominent (see R. H. Lowie 1937, p. 129 ff.). As a result, during the first three decades of this century, the historical approach remained dominant in North America (and Canada). For about a decade, this has waned, but it seems to be gaining momentum again recently. England is the country that has been least influenced by the historical approach, even when considering its formerly vast colonial holdings. A starting point for this can be found in the valuable ethnographic works of C. G. and Brenda Z. Seligman; N. W. Thomas comes closer to this approach. W. H. Rivers underwent a "conversion" to the historical school, though he was unwilling to abandon its connection to evolutionism. From the incisive criticism that E. E. Evans Pritchard leveled at evolutionism, as well as from his positive works, it is clear that he sought to work from a historical perspective. The same can be said of W. Hocart.

In France, the historical approach—which A. de Quatrefages had already adopted, albeit somewhat unconsciously—had not gained further traction. M. Delafosse and P. Rivet carried out valuable individual studies, and the latter later also began comprehensive comparisons along these lines. O. Leroy conducted critical investigations in the historical sense. P. H. Pinard de la Boullaye provided an excellent account of the cultural-historical method, which in several respects went beyond Graebner's work. The Swiss-born French ethnologist G. Montandon initially aligned himself entirely with cultural-historical ethnology (1914 ff.); later, however, he also sought to bring about an impossible synthesis between the cultural-historical school and evolutionism by incorporating his theory of the ologenesis of humanity.

In the Nordic countries—Denmark, Norway, Sweden, and Finland—progressive evolutionism never gained any particular traction. In Denmark, G. Hatt, a student of Boas, and his wife, née Demant, W. Thalbitzer, then Knud Rassmussen and his students K. Birket-Smith and Th. Mathiassen had long been working in the historical tradition, as had C. H. Feilberg. In Sweden, E. von Nordenskjöld conducted brilliant historical research in the field of South American ethnology, which was continued in an exemplary manner by his students. Working in the same vein were W. Kaudern in Indonesia, and G. Lindblom and S. Lagercrantz in Africa. In Finland, research on its national epic, the Kalevala, was guided toward a historical orientation by J. Krohn and, even more so, under the leadership of his son K. Krohn. N. T. Sirelius extended this approach to the comparative study of the other Finno-Ugric peoples as well.

In Poland, T. Czekanowski had advocated the cultural-historical approach from an early stage, as did his student Klimek, who further developed it. Later, P. Bulanda and Th. Chodzidlo continued this work there. Even earlier, the Polish exile J. Sieroszewski had made a promising start in Siberia, but later leaned toward evolutionist theories; M. A. Czapliczka maintained a more positive stance in the same field.

Even in tsarist Russia, researchers such as Pallas, Castrén, Radlov, and Potanin worked in a thoroughly historical sense, and it was only later that evolutionism began to spread. This shift can be clearly observed in Sternberg's work; in Bogoras's work, evolutionism made its breakthrough even earlier and more strongly. W. Jochelson's studies in Northeast Asia among the Koryaks and Yukagirs are well-grounded in history. The historical approach is even more pronounced in S. M. Shirokogorov's research on the Tungus in East Asia. While prehistorians in Soviet Russia have conducted remarkable excavations and research that also benefit ethnology, ethnologists—bound by the state to historical materialism—do not yet seem to have fully engaged in fruitful work.

Ethnologists in South American countries did not have to discard the evolutionism of earlier periods; historical accounts from the era of the Conquista and the later reports of their missions already steered them toward historical research, and in the Andean countries, the discovery of historically successive cultural layers had a similar effect. The number of researchers working in this direction—including some truly outstanding scholars—is quite considerable. It may be added that among them, not only does a general historical orientation prevail, but sympathy for the cultural-historical method in particular is more widespread than in North America. For example, Prof. Canals' wife (Buenos Aires) has already arranged for a Spanish translation of Fr. Graebner's method, and Frederico Schwab, librarian at the National Library in Lima, has long since completed a Spanish translation of my *Handbook of the Method of Cultural-Historical Ethnology*.

2. THE CULTURAL-HISTORICAL METHOD IN THE STUDY OF THE EARLIEST CULTURES

a. THE POSSIBILITY OF HISTORICAL RESEARCH AMONG LITERACY-LESS PEOPLES

As just explained, historically oriented ethnologists have conducted their research in all parts of the world and in all subfields of culture. It is precisely the global scope of these studies and their sheer number that should instill in the readers of *Historia Mundi* the confidence that the most thorough historical research has been conducted here on these ancient peoples of human history, who knew no writing and therefore left behind no written documents. Therein lies the overwhelming significance of this part of world history: it presents us with the earliest chapters of this history, which—spanning countless tens of thousands of years—not only surpass the scope of written history (with its six to seven millennia) by at least a factor of ten in terms of external duration, but also remain significant for all future eras of human history through the establishment of all elements of human culture in economy, society, religion, ethics, and art—which was already taking shape at that time—and which remains significant for all subsequent eras of human history.

Given the progress that has now been made in ethnology, we can easily dismiss theories—which W. Wundt, however, still put forward in his *Ethnopsychology*—namely, that one cannot yet speak of history among "primitive" peoples because, for them, everything is merely a mass; there are no individual, personal differences among these people, whereas history begins only with the intervention of individuals. I opposed this theory as early as 1906 and demonstrated that it was merely a theory, without the slightest support from positive facts. Since that time, my call at that time for research into individuality has been widely heeded, and distinct individuals—including those with leadership talents in various fields of culture—have been found among all the oldest peoples, wherever such research has been seriously pursued; such as Gusinde and Koppers among the Fuegians, Schebesta among the African and Asian Pygmies, Schumacher among the Batwa Pygmoids, and Koch-Grünberg among South American Indians. Since Franz Boas, influenced by Galton, also advocated for individualism among primitive peoples, such studies were also conducted among North American Indians, and this led to the valuable autobiographies of Indians by P. Radin, Franz Michelson, and others (see R. H. Lowie 1937, pp. 134 ff. and 189).

However rich and comprehensive the historical groundwork may be across the entire globe, how will it be possible to go beyond research on peoples living in our present time and reach those immeasurably long periods before written history? Certainly, we make use of

first and foremost the documents of written history to penetrate as deeply as possible into that history itself. Thus, for the newly discovered peoples of the Americas, Africa, and Oceania, there are accounts from the Age of Discovery itself that take us back two, three, or four centuries. Regarding the peoples of the ancient world, Greek and Roman writers report not only on their own cultures but also on various aspects of foreign border peoples. Later, Arab travelers joined them, journeying through inner Africa, inner Asia, and Indonesia and reporting on these regions. Chinese annals contain accounts of foreign peoples with whom they came into contact, whether peaceful or hostile. Certainly, all these accounts must be consulted, but how incomplete and unreliable they often are, and how many peoples are not mentioned in any of these written sources! This is where the actual task of the cultural-historical method begins.

b. SUCCESSIVE CULTURAL LAYERS IN ETHNOLOGY AS HISTORICAL PERIODS

A comparison with the strata that prehistory discovers and studies in the earth as the last remnants of past cultures may give us an initial insight into the task of the cultural-historical method. The remains of prehistoric cultures lie in the earth in layers, one on top of the other, and this sequence of layers generally serves as the objective measure of their age, such that the lower layers are the older ones and the upper layers are the younger ones. The older a layer is, the more time moisture and a host of other factors of decay have had to destroy both the human remains themselves and the objects of human culture. Thus, one will never be in a position, for example, to uncover an entire, intact settlement—an extended family with their dwellings, tools, clothing, and jewelry—in order to form at least some picture of life at that time. Burial sites are the most likely to have survived—though even from the earliest times they remain quite scarce; yet these are sites of death, not of life, and the oldest burial sites contain, so to speak, nothing, since it was not the custom at that time to place tools, weapons, clothing, jewelry, food, and drink in the grave with the deceased. As for the people themselves, when found in these layers of earth—if found at all—they are always dead; they no longer speak and cannot tell us anything about their inner lives, their thoughts and feelings, their family structures and other social forms, their economic systems, their ethics, or their religion.

Well then, in prehistory, the cultural layers lie vertically one above the other—

one upon another and all buried in the earth; therefore, all life has faded from them, and the older they are, the less they were able to preserve even the material objects of their culture. In ethnology, too, there are strata of peoples and cultures; however, they do not lie one above the other, but side by side and, viewed from a certain perspective, one after the other. Compared to prehistory, they have the immeasurable advantage that they are not buried underground and are thus not subject to decay and destruction, but are preserved in the full vitality of their entire culture. Prehistory, for its part, has the advantage that the chronological sequence of culture is objectively established through the superimposition of layers [cf. O. Menghin, p. 250].

c. CULTURAL PERIODS IN AMERICA AND AUSTRALIA

Ethnology, of course, lacks the superimposition of cultures and the resulting advantages in determining their chronological sequence. But even the coexistence of cultures offers real possibilities for dating *[see O. Menghin, p. 246 ff.]*.

For example, for all of ancient America, the only possible route of immigration for the oldest human cultures is the land bridge that once stretched across what is now the Bering Strait; for crossing the width of the Pacific Ocean was impossible with the primitive seafaring methods of the earliest times (rafts, bark boats). Consequently, the culture furthest from this sole point of entry is the oldest—namely, the cultures of Tierra del Fuego at the southernmost tip of South America.

An identical, almost even clearer case exists for determining the chronological sequence of cultural layers in Australia. Here, too, there is only one point of entry for the earliest period: the tip of the Cape York Peninsula in the north, which juts directly into the archipelago of the Torres Strait, which in turn extends all the way to New Guinea, from where the connection to Indonesia and Southeast Asia is established. Even within the Torres Strait, the waterways are so narrow everywhere that they can be navigated even by primitive vessels. If all earlier migrations originated from the Cape York Peninsula, then the culture in Australia furthest from this gateway is also the oldest—namely, that of the Kurnai in the far southeast, which is protected from assimilation by dominant cultures by the Australian Alps; related to them are the immediately neighboring Kulin tribes south of the Darling River. All other Australian cultures are layers that have settled alongside the oldest layer in a succession and sequence of their migrations, and the last, the youngest of them—which Durkheim, which Spencer and Gillen had considered the oldest—are undoubtedly the Aranda tribes, who, having found the irrigated eastern third of Australia already occupied by earlier tribes, were compelled to make do with the arid sandy deserts of Central Australia. In other, partly smaller regions of the world, such a chronological sequence of cultures can be objectively established in the same way.

The tribes and cultures here that are furthest from the points of entry—and are therefore the oldest—have in fact been pushed back to the outermost peripheries of the continents. However, this peripheral location alone is not sufficient to declare them the oldest; **they must also be areas of retreat, not areas of conquest.** Thus,

the Tupi-Guarani tribes, who occupied the east coast of Brazil at the time of the discovery of America, are indeed peripheral tribes, but not the oldest; they had conquered these territories only a short time earlier. The situation is similar with the northwestern cultures of North America; as the Jesup expedition has amply demonstrated, they comprise a more recent cultural tradition, which is thus the most "peripheral" culture here as the most recent arrival, and which is also found on the periphery of Northeast Asia among the Koryaks, Chukchi, and Itelmen, who therefore cannot be designated in their entirety as "Paleo-Asians."

d. CULTURAL PERIODS IN NORTH AMERICA

Later, younger cultures—which are often themselves stratified—do not always push the older and oldest cultures ahead of them; there are also cases where they penetrate the territory of older or oldest tribes, thereby displacing them in both directions.

We have a classic example of this in North America as well. The oldest tribes of America had already entered the continent when, due to the existence of the land bridge from Asia to America, the climate in the north was not yet Arctic but rather the milder boreal climate. Some of these oldest tribes, such as the Fuegians and others, had migrated further south; another group, naturally scattered at that time, occupied the central part of North America, roughly along the present-day border between the United States and Canada. When that land bridge was severed and torn apart into the chain of islands that is now the Bering Strait, and the climate shifted from boreal to Arctic, two cultures emerged from Northeast Asia: what Birket-Smith termed the "Ice-Hunting Culture" and the "Snowshoe Culture." The bearers of these cultures—the Dene or Athabaskan tribes—penetrated the territory of the indigenous tribes, and remnants of these vanguard groups can still be found today in the two Dene tribes living in the southeastern United States: the Navajo and the Apache.

The rift that had developed among the indigenous tribes originally inhabiting this region was later significantly widened by other tribes: the Sioux tribes coming from the southeast, the Pawnee tribes coming from the south, and the Shoshone tribes coming from the southwest. As a result, part of the ancient tribes was pushed further and further westward—across the Rocky Mountains and the Great Basin plateau, and finally over the Sierra Nevada into north-central California (north of San Francisco Bay)—in two waves: an earlier one, the Yuki group, into the area between the Sacramento River and the coast, thus again forming a peripheral culture of retreat, and a more recent one, the Maidu group, into the area between the Sacramento River and the Sierra Nevada. The other part of these ancient tribes was pushed eastward along and across the Great Lakes to the Atlantic Coast—the Pre-Algonquian and the Old Algonquian tribes; there, the same division into two groups was repeated as in north-central California. Here, the timeline must be set both to the west and to the east from the aforementioned breakpoint: the farther away from the breakpoint on either side, the older the cultures are.

e. DETERMINING THE CHRONOLOGICAL SEQUENCE OF MIXED CULTURES

Thus, cultural-historical ethnology has identified a number of other chronological markers, which I will discuss following Graebner's "Method" and

(W. Schmidt 1937, p. 184 ff.); it would go too far to present them all here. However, I must briefly mention one chronological indicator, since it is used in exactly the same way for prehistory, and especially for determining the chronological sequence in more recent cultures. In prehistory, too, it happens that one culture migrated and came into contact with another culture that was also still in existence; it may be that these cultures intermingled and thus produced a new, mixed culture; here, the simple but obvious criterion applies that the mixed culture is always younger than the two cultures from whose mixture it arose. The same process occurs very often in ethnology as well; the difference from prehistory, however, is that in ethnology the tribes are still living today, and one can often observe not only the product of the mixture but also the living process of the mixture itself. In prehistory, we come to know only the dead product, if it has been preserved in the earth as remains, along with the two cultures from which it is composed.

f. ESTABLISHING HISTORICAL CAUSAL RESEARCH

Yet establishing the ethnological sequence of ages is not the whole story; it is a necessary precondition, but on its own it would not yet constitute history, but at most a chronicle. However, establishing the sequence of ages also performs, in and of itself, an important service that goes beyond it: cause and effect are necessarily related to one another in time; the former must always precede the latter, and the latter must always follow the former. The temporal relationship is reversed when it comes to means and ends: the latter always precedes, is conceived of first; the former, as such, always follows. Thus, if, for example, someone were to posit one cultural element as the cause of another, but it were clear from the chronological sequence that the former arose only after the latter, that assumption would be immediately dismissed—no matter how plausible the "intrinsic" suitability of the former element as a cause for the latter might appear. The same applies to the relationship between means and ends. Thus, the chronological determination helps us to define causal and final sequences more reliably and to conduct trustworthy causal and final research. I have devoted a detailed exposition to how causal (and final) research should be conducted (W. Schmidt 1937, p. 223 ff.) *[see also O. Menghin, p. 252 ff.]*.

It would take us too far afield to present it in its entirety here. But I would like to highlight one common—and often misinterpreted—case. Evolutionary ethnology—and, to a large extent, functional ethnology as well—is strongly inclined to derive the explanation for a cultural element or cultural process directly from the present, from the current natural and cultural environment. This might be accurate if the culture in question had fallen from the sky as a perfect tabula rasa, onto which the *present* environment could have inscribed anything at will. However, the vast majority of cultures did not originate at their present location; rather, in many cases they have undergone long migrations during which they came into contact with a number of other cultures and various other environments, and from which they have been influenced to a greater or lesser extent. It is now evident that the explanation for a cultural element—a tool, a custom—cannot be drawn from the present, and certainly not from a more recent culture, if it already appears in older cultures; and it must likewise be evident that its earliest origin—and thus its most intrinsic nature—must be explained by the conditions of the oldest culture in which it is found; later cultures cannot produce it, because it already exists; they can only bring about changes in it. Here, too, the necessity of prior objective dating becomes apparent.

g. EVOLUTION AND EVOLUTIONISM. INTERNAL CULTURAL DEVELOPMENT

When the cultural-historical school of ethnology set itself in opposition to the earliest evolutionist school, there was no shortage of opponents who claimed that the cultural-historical school did not recognize evolution. This is a mistaken assertion; it simply objects to the idea that evolution—internal development—should always be regarded as the most obvious explanation and accepted, so to speak, without positive evidence, and that external development resulting from historical influences should only be considered once the impossibility of internal development has been proven. Rather, it must be noted that both internal and external development require evidence, but that the evidence for the latter is easier to provide and therefore one must methodologically proceed from the latter. This facilitates research; of course, it remains difficult enough, and a careful, methodical approach is required to arrive at the correct conclusion (see W. Schmidt 1937, p. 205 ff.).

h. EMPATHIZING WITH THE SOUL OF PEOPLES AND THEIR CULTURES

Thus, the cultural-historical method makes it possible not only to identify and describe external cultural development but also to penetrate the soul of cultures and gain an understanding of the development of this soul, which is, after all, an internal development. It makes it possible

and also makes it easier to meet a requirement—necessary for achieving this goal—that historical science imposes on all peoples, including those of written history, but which it must also apply to the immense mass of so-called primitive peoples, who span many tens of thousands of years and are spread across the entire vast earth. This is the demand to empathize with the soul of a culture, of a people.

No serious ethnologist today believes that all these peoples and cultures have only *one* soul—which would be pre-logical and pre-conceptual—the "Soul of the Primitives," as the title of a book not long ago put it. Now that this former theory has collapsed due to its inherent and external impossibility, how many and what kinds of souls are there now that one must empathize with? To this question, ethnology to date—as well as its younger sister, the psychology of peoples—has responded only with classifications, with the establishment of "types" that were sometimes witty, sometimes bizarre, sometimes superficial and meaningless, but in every case the product of a schematizing intellectualism and therefore lacking any soul into which one could empathize. Traditional ethnology has been unable to produce a historically developed—and therefore genuine—grouping that would have brought its soul with it from the individual and the family, because, unlike cultural-historical ethnology, it had not set out to elucidate the profound historical sequences of the cultures of peoples.

I have shown how the requirement to empathize with the soul of cultures has been made easier in the case of individual primitive cultures and the various primary cultures (W. Schmidt 1937, p. 241 ff.). It is not necessary to demonstrate this here; we will experience and witness it for ourselves in the following section, where we will become acquainted with the individual primitive cultures.

3. OVERVIEW OF THE OLDEST CULTURES THE CULTURAL CIRCLES

a. CONCEPT AND FUNCTION OF THE CULTURAL CIRCLE

Cultural-historical ethnology has not been content merely to establish the chronological sequence in the development of individual cultural elements: tools, weapons, forms of habitation, types of jewelry, forms of art, social groupings, ethical and religious views and practices—

but has also sought to establish their interconnection and interaction within cultural wholes, the so-called cultural spheres. The identification of these cultural spheres represents a certain culmination of its research efforts, and this may be why some outsiders have referred to the cultural-historical method as the "doctrine of cultural spheres" *[cf. O. Menghin, p. 241 ff.]*. The name, concept, and concrete application of the "cultural sphere" existed long before the emergence of cultural-historical ethnology. People spoke of a Greek, Roman, and Greco-Roman cultural sphere; of a Christian-Western cultural sphere; and, in modern times, of a Spanish cultural sphere, which dominated Europe in the 16th and the first half of the 17th centuries; a French cultural sphere, which began thereafter and lasted until the early 19th century; an English cultural sphere, which succeeded the French one; and so on. Cultural-historical ethnology has done nothing more than apply this name and concept to the earliest periods of human history as well.

It did not create these cultural spheres; they emerged as the end products of its research conducted according to the cultural-historical method. It could not ignore them, so significant and influential were they. It also recognized the validity of the term "cultural sphere": just as a circular line returns to itself and separates the entire area it encloses from other areas, rendering it independent of them, so the cultural sphere encompasses all the essential categories of human culture: ergology, the economy, society, customs, religion, and art; it thereby also satisfies all of humanity's essential cultural needs and finds within them an inner stability that ensures its long-term survival (W. Schmidt 1937, p. 163 ff.).

This is the cultural sphere in the order of being, which I distinguish from the cultural sphere as a methodological means and goal of research (W. Schmidt 1937, p. 168 ff.). Some opponents of our cultural spheres have failed to take this distinction into account when they accuse them of being a collection of disjointed elements. A cultural sphere may indeed appear this way in the early stages of research, when each individual element must be examined in specific studies to determine its ethnological age and the possibility of its belonging to this cultural sphere; for cultural-historical research tolerates no a priori assumptions here. In this state of incompleteness, individual elements might initially appear to be disconnected. One must temporarily endure this state; it cannot be resolved with "ingenious" hypotheses, but only through methodical research. Once the

cultural sphere is complete, then the organic interconnectedness of its elements is precisely what constitutes its essence (cf. W. Schmidt 1937, p. 170 ff.).

Thus, in the earliest history of humanity, we distinguish a number of cultural spheres, which, however, can quite naturally be grouped into two orders, since the second order historically emerged from the first, older one.

b. THE CULTURAL CIRCLES OF THE EARLY HUNTING-AND-GATHERING STAGE:

THE PRIMORDIAL CULTURES [= BASIC CULTURES ACCORDING TO KERNS]

The first and oldest category consists of cultural groups of the hunting-and-gathering stage, in which people live solely on what nature produces through spontaneous growth and provides them as food. We group them together under the name "primitive cultures" because they represent the oldest human culture accessible to us through ethnological means and methods. The totality of the primitive cultures also has the longest duration of all cultural circles: all the tens of thousands of years of the Upper and Middle Paleolithic and the preceding Wood and Bone Age [cf. *H. Breuil, p. 269*], that is, the entire period up to the onset of the Upper Paleolithic [see *K. J. Narr, pp. 502 ff.*].

The cultural spheres of the primordial culture can be geographically divided into:

1. The central primitive culture, comprising the central belt of the Old World, as well as the Asian and African Pygmies and the Asian Pygmoids [= *Weddide, cf. E. v. Eickstedt, p. 132*] [*Anthropology: E. v. Eickstedt, pp. 152 and 165 ff., H. Baumann, pp. 167 ff., S. Alcobé, pp. 183 ff.*], which were undoubtedly historically connected at one time.
2. The northern primordial culture, encompassing the northernmost edge of East Asia along with the Maidu group in north-central California, the group of the ancient Koryaks, and the reindeer-herding Eskimos now living in North America *[on anthropology, see J. Imbelloni, p. 202]*. This cultural sphere is certainly historically connected to the following one.
3. The North American primordial cultural sphere, consisting of the Yuki and Maidu groups in north-central California and the group of the ancient Algonquins *[on anthropology, see J. Imbelloni, p. 202]*, two groups that were formerly also geographically connected *[see p. 382]*.
4. The southern primordial cultures in the extreme southern regions of the three continents: Africa, America, and Australia. These three cultures are not directly related historically. The South African primordial culture of the Old Bushmen *[on anthropology, see H. Baumann, p. 168 ff., S. Alcobé,*

p. 183 ff.] has, rather, historical ties to the central primordial culture of African Pygmies *[also in a more recent stratum; see K. J. Narr, p. 504]*. The South American primordial culture of Tierra del Fuego *[on anthropology, see J. Imbelloni, p. 198]* is historically linked to the North American primordial culture. As for the third, the southeastern Australian primordial culture of the Kurnai-Kulin, we can currently only surmise that it has its origins in a prehistoric Southeast Asian primordial culture.

It should be noted here that we include among the ancient primordial cultures only those original primordial cultures that have never been anything else, but not cultures that once stood at a later stage—namely, that of production cultures—but which, during their migrations, reached regions where they could not maintain the corresponding economic stage and retained only the social forms corresponding to it, albeit in stunted forms.

c. THE CULTURAL CIRCLES OF THE *[ACCUMULATION AND]* PRODUCTION STAGE: THE PRIMARY CULTURES

In primitive culture, a natural division of labor prevails, whereby men procure animal food through hunting, and women procure plant food by gathering wild plants. At that time, people lived in regions where wild animals and plants thrived; men acquired more detailed knowledge of the lives of animals, and women of the lives of plants. When humans transitioned from the gathering stage to the production stage—from hunting to animal husbandry, from gathering plants to cultivating them—neither men nor women were capable of making both advances on their own, precisely because men understood only animals and women understood only plants. However, it was also impossible for men to make the transition from hunting to animal husbandry and for women to make the transition from plant gathering to plant cultivation in the same region; for the climatic and other ecological conditions required for animal husbandry are entirely different from those required for plant cultivation.

Thus it came to pass that the cultural sphere of animal breeders was established independently by men in their own region, while the cultural sphere of plant breeders was established independently by women in their own region, far removed from animal husbandry. By establishing these two cultural spheres, cultural-historical ethnology has opened the first breach in the linear development of human culture proclaimed by evolutionary ethnologists: the laborious debates among earlier economic ethnologists as to whether plant cultivation originated from

The question of whether animal husbandry arose from agriculture or vice versa is irrelevant: neither originated from the other; both emerged from the primordial culture, but independently and in regions far apart from one another. It should be noted here that animal husbandry began in the mountain meadows of the Altai in Central Asia and continued in the tundras to the north of it. Here, reindeer were bred; to the south, in the steppes and deserts, horses and sheep were bred, and later also cattle and the (two-humped) camel. Plant cultivation, on the other hand, began in the most water-rich region on Earth, in the river valleys of the Brahmaputra, the Irrawaddy, the Mekong, and other rivers in the northwest of the Indian subcontinent.

While the cultural sphere of animal breeders was established by men and developed into patriarchal economic and social forms, the cultural sphere of plant breeders—which owes its existence to women's transition from plant gathering to plant cultivation—gave rise, quite analogously, to matriarchal economic and social forms. Just as these two cultural spheres arose separately—internally distinct in their characteristics and externally separated by the distance between their respective regions of origin—so too did they remain separate from one another for millennia, developing their distinctive traits in every respect in accordance with their own styles during this period of isolation. It was only later, during their migrations, that they came into contact with one another and gave rise to mixed cultures in which animal husbandry and plant breeding merged into new forms.

Furthermore, people of the primitive culture advanced to a stage which, from a rational standpoint, cannot be described as a stage of production but rather represents a perfected form of hunting, initiated by men who improved hunting weapons and methods. This increased the yield of the hunt, enabling this culture to become sedentary, just as the matriarchal plant-breeding culture had become—one originating with men, the other with women. Even if a distinctive cultural sphere had already taken shape in this way, it transitioned—if not through rational, then at least through irrational means—to the stage of production as well, in that the people there believed themselves to be related to a specific animal (totem), either descending from it or sharing the same lineage with it, and now sought to increase fertility through magical rites. This cultural sphere is even more strongly male-oriented than the patriarchal cultural sphere of the cattle herders, since it, too, was founded by men, and the women who gathered plants had no part in the progress of this culture.

In this cultural sphere, which we refer to as that of the male-dominated totem-

mystical higher hunters," difficulties arise in determining its region of origin; however, a solution to this has now been found. Further details on this, as well as on the other primary cultures, can be found in my work *Preliminary Studies toward a History of Culture* (1953).

d. RETROSPECT AND SUMMARY

Let us now look back at these three cultural spheres: All three have emerged from the family of the primordial culture, which, however, comprises three factors and no more: father, mother, and child. The father of the primordial culture, who hunted wild animals, finds his continuation in the production cultures within the patriarchal cultural sphere of the animal breeder; the mother of the primordial culture, who gathered wild plants, finds her continuation in the matriarchal cultural sphere of the plant breeder; the youthful, vigorous male child of the primordial culture gives rise to the andriarchal cultural sphere of the totemic higher hunters.

While we have encountered two male-oriented cultural spheres of the *[accumulation and]* production stage, there is only one female-oriented one. In the two male-oriented cultural spheres, the rational element appears separated from the irrational one; in the female cultural sphere, by contrast, both elements have remained united. The other, more realistic reason is that the female youth of the primordial culture were unable to give rise to their own plant-breeding cultural sphere of the production stage.

I also refer to these three cultural spheres as "primary cultures," because they mark the beginning of three new, fundamental, and entirely independent cultural spheres. Through them, the evolutionary unidirectional development is now broken in three ways, and human cultural development initially continues in three independent directions.

However, the identification and study of the primordial cultures must be regarded as one of the essential achievements of cultural-historical ethnology. Because the picture of humanity's oldest culture deviates most sharply from evolutionary distortions, the primordial cultures deserve special attention and will therefore be discussed in detail below.

II. THE PRIMORDIAL CULTURES

Those were solemn moments when human history began with the emergence of humankind. We are still unaware of where, in which part of the earth, this took place, and for that reason alone we can

form any conception of it, much less empathize with the eyes through which the first humans gazed upon the vast earth, or the feelings that moved them as they did so. It was certainly not a dull fear of the world that would have paralyzed them; even today, for example, all Pygmy tribes are lively and inquisitive, full of joie de vivre, and seize every opportunity for jest and laughter. Certainly, the regions where the people of primitive culture lived—both then and for a long time afterward—were not areas of poverty and deprivation. Their numbers were still small, and the Earth was so immeasurably vast and expansive; thus, they had a free choice and did not yet have to settle for regions with scarce food supplies—there was plenty of fertile and beautiful land available to them.

Thus, one should not assume that they were like tribes such as the Bushmen, who have been driven into the Kalahari Desert *[cf. S. Alcobé, p. 183 ff.]*, nor from the reindeer-herding Inuit who now live in Arctic North America, nor even from the people of Tierra del Fuego, who live in the cold Antarctic climate at the storm-tossed southern tip of South America: one must not infer the condition of the earliest peoples of primitive culture from such peoples of today's primitive culture. More suitable examples are the prehistoric peoples of north-central California, the oldest Algonquins of the Great Lakes region of North America, or the Pygmies of Africa and Asia. We shall yet see what achievements these peoples attained in terms of economic, technical, and intellectual culture.

Of course, the people of the ancient culture at that time did not believe they were living in a paradise. According to the traditions of most of these peoples, they did live in such a paradise in a bygone era, when God dwelt among humans on Earth in the beginning, instructed them in religious, moral, social, and economic matters, established the sacred ceremonies—either directly or indirectly through the tribal ancestor subordinate to him—and only later departed from humanity, heading eastward into heaven. This way of life, regarded by them as their most ancient, still resonates today as an ideal state that is now unattainable; yet some of these peoples believe that the Creator will restore it at the end of time. Among some of these tribes, there is a widespread belief that a sin committed by humankind was the cause of the end of this paradise; these include an Asian pygmy tribe, the Andamanese, and two African tribes—those from the Ituri in the Belgian Congo and those along the Gabon River in the French Congo—as well as the Maidu in north-central California—perhaps also tribes of the Western Algonquians—and the Old Samoyeds, who belong to this group. Among these tribes, with their nostalgia for a vanished paradise, a certain melancholy could thus have crept into their zest for life—

as the Gabon Pygmies express it in one of their songs:

The light grows dark,
The night even darker still,
Tomorrow will bring hunger:
God is angry with us,
Tomorrow will be empty and hard,
For God is no longer our guest,
The guest who sits by the hearth fire.

This melancholy, however, has not degenerated into despondency among any of the Pygmy tribes; anyone who reads P. Schebesta's travel accounts will be able to see this for themselves.

I must already prepare you for a gap in the history of the peoples of the primordial culture, a gap that extends far back into the era of the primary cultures. We have, in principle, maintained—and subsequently found positive confirmation of—the fact that even among the present-day peoples of the primordial culture there are distinct individuals, just as there are among other later peoples, and that leading figures are not lacking here either. In principle, we make the same claim regarding the oldest peoples of the primordial culture, but we cannot substantiate it conclusively. No accounts of leading or other individuals have survived from those ancient times to the present day, nor have the proper names of such figures. We are dealing only with nameless people. Admittedly, even among these peoples there are already so-called "cultural heroes" or "saviors," to whom the invention of economic and technical advances, the establishment of social or legal forms, and revelations regarding religious matters are attributed. But these are figures with few or no concrete individual traits, upon whom a whole series of early advances are often heaped—advances that in reality were likely distributed among several individuals. In *primitive culture*, the cultural hero and savior very often coincides with the tribal progenitor, who is inspired and instructed in all things by the Creator himself; so many virtues and achievements are later attributed to him that he himself begins to rival the Creator and, in some cases, can even supplant him.

1. THE SOCIAL ORDER OF PRIMITIVE CULTURE

How did people in the earliest times live together? Did they even live together at all? Did not the individuals—so few in number at that time—get lost in the vast world, each on their own, emerging from this solitude only occasionally to interact with one another

procreate children, who would then keep these two people together for a time—but not for too long, since the man, in any case, would soon have withdrawn again, only to begin the cycle anew with another woman after some time? In this manner—and often in far more gruesome terms—evolutionary ethnologists and sociologists used to describe the beginnings of human society. Reliable research has revealed a completely different picture, one that, compared to those descriptions, holds plenty of surprises.

a. MARRIAGE IN PRIMITIVE CULTURES

The first surprise is that marriage is entered into by both parties—the young man and the young woman—in complete freedom; that both possess freedom in the choice of a spouse, so that their personal inclinations can come into play, and true love and even infatuation play a role here. When one compares this with how, in later, supposedly more advanced cultures, freedom is first taken away from the girl and then also from the young man—by their parents, grandparents, or the clan and tribe—one must regard these free marriages as superior to those arranged marriages.

The second surprise these peoples offer is that among a large number of them, sexual intercourse is prohibited before marriage, and boys and girls are supervised and admonished by their parents in this regard. It is a pity that space does not permit us to cite the evidence for this in detail. Such evidence is available from the African Pygmies of the Ituri and Gabon, among the Asian Pygmies of the Semang and Negrito tribes, the Batwa Pygmoids, the Arctic Koryaks, the Yuki and Maidu groups in north-central California, the Western Algonquin tribes, the Arapaho and Cheyenne, the Selish Indians, the people of Tierra del Fuego, and the Southeast Australians. Among the Gabon Pygmies, a girl who had committed a transgression was banished to the forest and was not permitted to marry her seducer; similarly, among the Koryaks and Cheyenne, such a girl was no longer courted by any young man; among the Batwa Pygmies on Lake Kivu, she was abandoned on an island. Among the Yuki Indians, boys were sternly warned during their coming-of-age ceremony not to associate with girls; the same was true among the Firelanders and the Kurnai in southeastern Australia. Among the few tribes where premarital sexual relations are more common, however, the rule applies that whoever impregnates a girl is compelled to marry her, so that, as

As one observer puts it, no child is born outside the protection of marriage.

W. Wundt writes of the third surprise in his *Ethnopsychology*: "There is scarcely any discovery in the field of human evolutionary history that has so surprisingly and so convincingly shattered previously widespread opinions as the discovery of monogamy among primitive peoples." Since Wundt wrote this, the evidence for monogamy among the peoples of primitive cultures has grown enormously. Thus, it is practiced without exception among the Andaman Pygmies and a tribe of the Semang Pygmies, among the Bagielli Pygmies in French and Spanish Cameroon, among the vast majority of Bushman tribes, among the Kurnai and Kulin tribes in southeastern Australia, the Fuegians, the Western Algonquins, and the pygmoid Wedda and Toala. Among other tribes of primitive culture, cases of polygamy are quite rare, even when cases of infertility in the first wife are included. This applies to most Negrito tribes, the Batwa Pygmoids, and the Bambuti Pygmies, where only 6% of marriages are polygamous. The reindeer-herding Koryaks exhibit the same percentage of polygamous marriages. Unfortunately, more detailed individual data are lacking for the North Central Californians; the majority here, too, have only one wife. That this monogamy is an ancient institution in primitive culture is evident from their creation myths; everywhere, the Creator creates only one*pair of progenitor parents*—a man and a woman—and thus establishes monogamy himself. This monogamy should not really come as a surprise, since it is the only natural form of marriage; for it is a biological law that, under undisturbed conditions, an equal number of boys and girls are always born, and conditions here are undisturbed, since there is neither abduction nor purchase of women.

The *mutual* freedom in entering into marriage was already an expression of the personal independence and dignity of both the young man and the young woman. Monogamy reinforces this equality and respect for the personality of both. It is further supported by the fact that in marriage, husband and wife contribute equally to the provision of food in the natural division of labor between the sexes, which has already been discussed; the woman's contribution in providing plant-based food is always quantitatively greater. The woman also has the same property rights as the man: everything she has produced and everything given to her belongs to her. Thus, there is a high degree of equality between husband and wife in marriage. If we add to this the fact that marriages are entered into freely and, for the most part, out of love, it becomes understandable that

there is generally a good relationship between husband and wife in marriage.

Observers are unanimous in their accounts of this; and when comparing these accounts with the status of women in later cultures, they consistently emphasize how much better and more respected women were in primitive cultures. Of course, there are also "family quarrels," which often stem from jealousy—a jealousy that is all the greater because there is also greater love at play here.

It is therefore not surprising that, compared to later cultures, all observers attest to the greater stability of marriage and the lower incidence of adultery and divorce.

E. H. It is reported, for example, of the South Andamanese that marital fidelity until death is not merely an exception but the rule. This is also confirmed by Portman, who emphasizes that divorce is rare or entirely unknown once the couple has a child. The latter is the rule among many other such tribes; this is also attested to by P. Schebesta. While he reports greater leniency among some of the younger Semang as well as the younger Bambuti, he emphasizes the stability of marriage among older couples: "Without a doubt, the social organization of the Bambuti, on the one hand, discourages frivolous divorces by curbing the whims of the spouses in this regard; on the other hand, it watches over the welfare of its own people, including within marriage, and protects them against encroachments by the other party, with divorce being the last resort," which, precisely because it is the *last* "weapon," is all the more rarely used. Fidelity until death is also attested among the Bushmen and the Wedda. Even for the Australians—of whom only the Southeast Australians belong to the "primitive culture"—Malinowski summarizes the results of his investigations in the following final judgment: "In the majority of cases, marriage lasts a lifetime, or at least for a long time . . . In any case, the view that has often been put forward—that primitive marriage is a very unstable union, frequently formed and dissolved on a whim, without a serious commitment to a long-term life together—is absolutely refuted by the substantial body of evidence."

Given all this, it is understandable that adultery is significantly less common than among neighboring, younger tribes that are more advanced in technical culture. In any case, nowhere is adultery lightly overlooked or glorified; rather, it is universally regarded as a serious crime, and there is no double standard that lets the man off the hook. In ancient times, the death penalty applied to both parties in cases of adultery—

; later, it was commuted to heavy fines, and among the Semang, to flogging.

"Adultery is branded as a crime by the Bambuti," reports P. Schebesta. Among the Western Algonquins, marital fidelity is held in the highest esteem and was glorified in a profound ceremony during the tribe's holiest festival celebrating the mystery of the creation of the world. The Selish Indians are famous for their chastity. Ross-Cock, one of their earliest explorers (1812–1814), writes of one of their tribes that the women are excellent wives and mothers, and their fidelity is so steadfast that he had never heard of a single case of infidelity.

Given all that we have heard here about marriage among the peoples of primitive culture, there can be no doubt that these people, who lived in such a marriage, derived much happiness, contentment, and harmony in their lives from it, beginning with the love that brought them together and held them together in marriage, despite the upheavals, fluctuations, and dangers that are ever-present wherever people are found. Thus, among the Arapaho Indians, during their tribe's most solemn festival (see p. 499), elderly married couples stood among the participants to embrace and kiss one another—presumably in remembrance of their youth, when they too had celebrated this festival—and the high priest standing nearby encouraged them and pointed out to the young people the blessings of married life. It is also significant that, in the monogamy of these marriages and the equality of men and women, both sexes can develop the gifts and abilities unique to their nature with equal freedom and dignity. Thus, in marriage, they were able to give each other the greatest gift—themselves—and each could complement the other's needs, both in their daily lives and in their innermost being, so that neither remained unsatisfied, and this mutual, equal complementarity formed the foundation of the marriage. Grinnell, the scholar of the Cheyenne Indians, confirms this with these beautiful words: "I have seen many such examples of good marriages, rarely expressed in words but demonstrated in daily life, where in all the man's pursuits his dearest companion was the wife he had courted as a girl, and at whose side he had fought the battle for success in life and had finally grown old."

b. THE FAMILY IN PRIMITIVE CULTURES

This force that creates happiness and peace is further enhanced when marriage becomes a family with the arrival of children, which then also becomes a

new source of joyful creative energy for the new little beings. After all, these children do not enter the world as strangers; rather, they are the fruit of their parents' love, who, in procreation, have given each other their very essence, which now appears in new beings and binds husband and wife together anew with the strongest bonds.

Marriage is, by its very nature of fertility, destined to become a family, and the people of primitive cultures all recognize the connection between marital relations and the conception and birth of a child—unlike some later peoples (such as the Aranda and others), who, in their exaggeration of ancestor worship, attribute children to the ancestral father and thus seek to obscure, to a greater or lesser extent, the child's direct connection to the father. However, they are not only knowledgeable about children but also delighted by them. Nor do they use any means to prevent either conception or birth, although some of them have become familiar with such methods from more recent peoples. Nor do they kill children who have been born; here, only among the Ituri Pygmies does it remain doubtful whether, in some cases, the weaker of twins is killed.

The birth statistics recorded among some indigenous peoples attest to their joy in having children. P. Schebesta reports on the Bambuti: "Motherhood is a woman's greatest longing; the child is the purpose of the family. The more children, the better. That is Pygmy wisdom . . . Husband and wife long for every new child; but not only they, but also the clan, for whom every new child meant strength and enrichment: That is why it is also welcomed with dances of joy."

Among the Gabon Pygmies, dances of joy are performed as part of special rites; then the newborn boy is turned to face the sun, and the chief recites the prayer:

> To you, the Creator, to you, the Almighty,
> I offer this new plant, this new fruit of the ancient tree.
> You are the Lord, we are the children
> To you, the Creator, to you, the Almighty.

The chief proudly adds: "We are not animals; we are not born like animals. When we come into the world, the Creator looks at us, and we look at him, with our faces turned toward him."

c. THE CHILD IN PRIMITIVE CULTURES

Numerous accounts from various researchers show how not only the mother but also the father jokes and plays with the children and anxiously helps the mother when a child falls ill. Father Schebesta feels compelled to offer the following testimony regarding the Bambuti mother: "Never—

one who has had the opportunity to live among the Bambuti for an extended period will deny the Bambuti woman the recognition that she is a caring mother who sacrifices herself for her child. . . . if one considers the hardships and struggles she endures to raise her child, and what she must go through—especially when the child is ill—then her maternal love shines in the brightest colors. Day and night she is literally bound to her child, nursing it at her breast for over a year; if it is sick, she warms it against her own body; she has no other source of comfort than her breast . . . For the sake of the child, she forgoes all marital relations; she never for a moment thinks—as the forest women do—of shunning the child in order to preserve her youth. She does not dwell on sexuality, but on the child, whom she looks forward to time and again and to whom she devotes herself entirely once it is born." But the researcher also lavishes high praise on the Bambuti father and then remarks: "The child also binds the married couple more closely together." P. Gusinde also attests to the qualities of his Tierra del Fuego women: "They are kind-hearted and self-sacrificing mothers who, in their sincere love for their infants and reliable care, far surpass many European women."

All researchers equally emphasize that the children, too, show their parents love and gratitude and treat them with respect and obedience. The vast majority of these peoples never strike their children; nevertheless, the children are well-behaved and obedient; others use fasting as a form of punishment. A stranger—even a European researcher—should not presume to strike a child; he would make himself unwelcome among the tribe in question, just as, on the other hand, every act of kindness and every gift he gives a child also wins over the hearts of the parents. The widely held view that these "savages" allow their children to grow up "wild," without any upbringing, is incorrect. Precisely because people of primitive cultures are not "savages" but human beings with hearts and a sense of moral responsibility, they not only nourish and care for their children's bodies so that they may grow ever stronger and more skilled, but they also provide their minds and characters with a genuine moral education, so that they may grow into well-rounded human beings who, both in the families they establish and in the communities to which they belong, not only get along with others but also contribute positively to happiness and well-being.

Children learn economic activities "through play," in part

on the one hand, through the many games played by children and adolescents that imitate adult activities; on the other hand, by gradually involving them in their parents' activities—the boy, for example, by accompanying his father on hunting trips equipped with smaller weapons, and the girl by helping her mother gather plants and prepare meals. Children are also explicitly educated in social and moral competence. Already here, the foundation is laid for obedience to parents and respect for all elders, for a willingness to help, generosity, and selflessness—qualities we will later come to recognize in adolescents and adults—as well as for social sensitivity and social care, which are continuously practiced here in a living tradition.

We find teachings of this kind among the Pygmies of the Andaman Islands, the Bambuti, and the Gabon Pygmies; regarding the latter two, it is also reported that when a boy experiences his first wet dream, his father seriously admonishes him not to give in to it willingly. M. Gusinde also reports such teachings among the Firelanders, as does Seligmann among the Wedda. The instruction and admonition begin as early as in children's songs. For example, in southeastern Australia, a mother from the Yualayi tribe extols the joy of giving to her small child:

Give to me, baby,
give to her, baby,
give to him, baby,
give to anyone, baby,
give to everyone, baby!

Or, while tapping the child's little hands with a millipede, she teaches honesty and kindness:

Be kind, don't steal!
Don't touch what belongs to others,
Leave it all alone!

Grandparents also play a significant role in the upbringing; the grandfather admonishes the grandson, the grandmother the granddaughter—both are able to illustrate and reinforce their lessons all the better by drawing on the rich treasure of their experiences. Among the Selish, such instruction is often given in the evening; among the Algonquinized Winnebago, a father would have his children sit by the campfire on the hill first thing in the morning and impart lessons and admonitions to them. As a good teacher, however, he adhered to the rule: "As soon as I see that the children are showing signs of restlessness, I stop immediately." Among several of these tribes, educators invoke the Creator to reinforce their teachings; they believe that He first established the laws governing their moral and social life, watches over their observance of these laws with His omniscience, rewards compliance, and punishes transgression. This is particularly true among the youth—

initiation rites or the initiation of boys and girls, where the community supplements and reinforces parental upbringing (see below, p. 497 ff.).

The position the child occupies in the family of the primitive culture is revealed by the fact that it possesses the very same scope of property rights as adults: everything it has made and earned itself, and everything that has been given to it by others, belongs to it and is not touched by the adults. An ethnologist staying there for research purposes must—just as he must turn to the woman, not the man, to obtain objects belonging to her—also turn to the child itself when collecting children's property for his museum.

In all these and other matters, respect for the child's developing personality is expressed alongside love and care for the child. Certainly, children are strongly urged to adhere faithfully to the old customs and traditions. Parents, however, raise their children to be independent and must educate them to that end. Independence, however, is something far more comprehensive in the primordial culture than in later cultures; for here there are still no specializations —the individual faces life alone and must know how to satisfy all his or her needs on one's own. In matters of food, clothing, tools, weapons, and their use, he or she must know and be able to do everything himself or herself, and that is impossible without independence.

These people of the primordial culture, who loved their children so dearly, remained young themselves longer through their living connection with childhood and youth and did not age prematurely; even the grandparents became young again here. A generation that remains young through its love of children imparts to the next generation a very different measure of affirmative vitality than a generation weary of children, which passes on only the seed of decay already present within it, with weary discontent. These child-loving people preserve a happy, fully realized humanity in yet another sense. Certainly, their economic work, too, had not only its hardships but also its charms. Through hunting, the man came to know the entire fascinating development of animal life, and the woman, the no less appealing unfolding of plants in bloom and fruit. But in their growing children, the wonders of physical and spiritual human development unfolded anew in each child before the eyes of father and mother. Both parents were now no longer merely life partners to one another, but together they populated an entire little world of developing human beings, who dispelled the loneliness that, at that time, in a world still so sparsely populated

Earth—was much more oppressive—was lovingly enlivened by children's laughter—and even their crying—and their play. M. Gusinde beautifully expressed this role of children in dispelling loneliness for the people of Tierra del Fuego with the words: "Life there would be unbearable for the adults if they did not constantly have small children around them, who are an indispensable source of joy for all parents and a powerful magnet for their parental feelings."

d. PATHS TO THE STATE OF PRIMORDIAL CULTURE. ITS ORGANIZATION

Only now, after we have come to know the true family of the primal culture, can we also understand the paths that lead to the state of the primal culture. One such path is the exogamy of the primal-culture family. It consists of compelling the family to reach beyond its own boundaries when it wishes to form a new marriage: its daughters must seek their husbands elsewhere and leave their family to join their husband's; its sons must likewise seek their wives elsewhere, though the wives then move to their husbands' location (patrilocal marriage). Only if the wife were her parents' only child—which is very rare in the original culture—does the husband sometimes move to the wife's community. Through marriage, therefore, relationships are established between the family and the wife's family, known as in-law relationships.

It should be noted that exogamy is a relative concept: the question is, from what must one depart in order to enter into a marriage? Externally speaking, local exogamy exists in primitive culture; for the man, this means he must bring his wife from outside his own place of residence. From an internal perspective, this local exogamy traces back to blood-related exogamy, which in this case actually coincides with local exogamy, since in primitive culture the inhabitants of a given locality are somehow related by blood. Thus, in the founding of a new family, not only do new, non-blood-related families come into relationship with one another, but so do two different settlement areas.

Here, then, the second path opens up, leading us directly into the state of primitive culture: the existence of the (loose) extended family *[in other terminology: local group or horde]* in primitive culture. This is a social structure whose full significance has been recognized by only a few researchers. It consists of the family of the parents and their children and the families of the married sons, to which individual other blood relatives may also be added. We are now faced with the significant fact of primal culture that here not only

does the individual exist on his own, nor does the individual family; it, too, exists only within a community—specifically, the spatially defined territorial community of the extended family; for only the extended family is the holder of land ownership, a territory on which only the members of the extended family are permitted to hunt wild animals and gather wild plants (W. Schmidt 1937a, Vol. I, p. 288 ff.).

This, however, also clarifies and broadens the concept of local exogamy as it applies in primal culture: it does not apply to the "place" of the individual family—which, as such, has no "place" of its own—but rather to the extended territory of the extended family. Outside this "place," the young man must seek a wife and the young woman must marry. Thus, with every marriage, it is not merely two individual families that come together, but two extended families with their respective territories; the connection formed here extends into broader spheres.

Thus, from the very beginning, the human family was structured in such a way that it contained the state within itself, with its three elements: 1. in its organization—it does not live solely for itself, but together with other families within the broader association of the extended family; 2. in its territory—this extended family is the sovereign owner of a large territory; 3. through every marriage and by other means, such a sovereign extended family enters into "interstate" relations with another sovereign extended family of the same kind. We thus have here three essential characteristics of the state: a unity comprising a number of individual groups, the sovereign possession of a portion of the earth, and the free association with other entities of the same kind.

Beyond the extended family, there is no confederation of multiple extended families in primitive culture; where such a confederation is found in isolated cases, the influence of later cultures can be clearly demonstrated. The extended family comprises a number of individual families, but only in a loose association. We first encounter a stable extended family in the primary culture of herders. The loose connection between individual families—common in primitive culture—means that the extended family does not interfere with any of the individual family's essential elements: first, not in its formation, which, as we have seen, occurs freely on the part of both sexes; second, not in its economic activities; for what the man has obtained through hunting and the woman through gathering plants becomes the property of the individual family, is prepared there, and enjoyed as a family meal; third, not in its dwelling, for each individual family builds its own hut; fourth, not in the upbringing of the

children, for the parents constitute the sole and highest authority for the children—the only authority endowed with the power to command in primitive culture.

The bond that the extended family imposes on the individual families belonging to it consists primarily of the obligation to support parents who are no longer able to work due to old age, followed by certain contributions to the elderly and the infirm, and in some tribes, also to families with many children. Caring for elderly parents is not too burdensome, because it does not begin too early and thus does not have to be borne simultaneously with the burden of one's own children; for where adult children marry early—girls at 14–18, boys at 18–22—the parents are still vigorous; by the time they become in need of assistance, their own children have already grown up.

There is also another aspect in which the extended family places a demand on the individual family. Within their sovereign territory, individual families do not roam around arbitrarily on their own, but rather practice a sustainable, intelligent form of resource management appropriate to this stage. The extended family as a whole remains in a specific part of the territory for a time to hunt and gather. After a certain period—8, 14, or 20 days—the area is depleted and no longer provides sufficient food. Then the need to migrate arises—a form of small-scale nomadism, as distinct from the later large-scale nomadism of herders. Leadership is essential for these migrations; for everyone must migrate together, otherwise the purpose of the migration will not be achieved: the temporary conservation of the area to be abandoned, where overexploitation is to be avoided. This necessity for leadership, which also arises in other contexts, is such an important and interesting aspect of the organization of the state in primitive culture that we must devote a separate section to it.

e. THE GOVERNANCE OF THE PRIMITIVE STATE

The forms of leadership in the state of primitive culture can be classified into three or four groups.

The first group, in which there are no chiefs at all, includes the Asian Pygmies, the Fuegians, and, among the Northeastern Algonquins, the Montagnais-Naskapi. Among the Andamanese, in particular, there are respected men who exert outstanding influence through their personal competence. Advanced age is not always a requirement; the wife of such a man, if she possesses the necessary qualities to some extent, also exerts a corresponding influence on the women.

A second group practices chieftaincy; however, this is neither hereditary nor for life. This group includes the Maidu tribes of North America's indigenous culture. It is possible that the Yuki tribes also belong to this group; the claim, as Kroeber states, that they have a grand chief is rather unlikely.

In the third group, chieftaincy is not yet hereditary, but it is for life. This is the case with the two southeastern Australian tribes, the Kurnai, where a higher age is likely required, and there is a slight tendency toward heredity, in that, when several candidates possess equally good qualities, the son of a chieftain is given preference. Among the Kulin, the election is carried out by the heads of the extended families. These heads also play a role elsewhere in the appointment of the chief; this is attested among the Ainu.

The Ituri Bambuti, a group among the African Pygmies, are a complete exception to this rule with their strict and precise age-based system for selecting a chief; he is always the oldest man in the group, and upon his death, the next oldest man always succeeds him, so that hereditary succession in the true sense does not occur.

In all these groups, the chieftaincy is neither hereditary nor does it possess authority to command. It merely presides over the (by no means universal) institutional deliberations of the family heads and carries out their decisions. It is, therefore, a weak chieftaincy; its power—if one can even speak of power here—is always based on personal, and largely moral, qualities: wisdom, kindness, selflessness, and integrity. Also included are: seriousness, thoughtfulness, and reserve; for this reason, among the tribes of northern and central California, the chief has a man at his side who acts as a herald, proclaiming his orders and announcements in a loud voice, since speaking loudly is contrary to a chief's dignity.

Another characteristic of this chieftaincy is that it constitutes only a higher level, standing directly above the aggregate of individual families; there is no grand chieftain who would stand above subordinate chieftains. Where the latter occurs, one can detect or suspect the influence of later cultural stages. This is the case with the majority of the Eastern and Western Algonquins and the Selish tribes, which undoubtedly belong to the younger strata of the indigenous culture and have, in particular, been strongly influenced by matrilineal culture. Both groups also exhibit the non-Turkic cultural trait of having, in addition to the actual "peace chief," a "war chief"; the latter, however, serves only during times of war, and among the Selish, he is moreover re-elected for each new war. This office of war chief presupposes a greater and enduring significance of war, which, as we shall see (see p. 406), is by no means a peculiarity of primitive culture. But even the chief chiefs have no actual authority here; they are bound by the decisions of the council, which consists of the subordinate chiefs and other representatives of the individual extended families—

. Neither the office of chief nor that of sub-chief is hereditary here either.

Because chieftainship is not hereditary, no ruling class or any kind of aristocracy can emerge. Thus, there are no class distinctions whatsoever, not even based on the size of one's property. Likewise, there is no form of bondage, serfdom, or even slavery. Freedom and equality prevail here universally without any distinction of person and are neither infringed upon nor diminished by the existing chieftaincy system. Even among the Bambuti Pygmies, with their chieftaincy strictly regulated by seniority, one of them remarked: "When he gives the order to move camp, everyone follows him; otherwise, however, everyone goes their own way."

f. THE TERRITORY OF THE PRIMITIVE CULTURE STATE

Among the three constitutive elements of the state of primitive culture, sovereign authority over its territory stands out as the most definitive. Elsewhere (W. Schmidt 1937a, Vol. I, pp. 288 ff.), I have summarized my research on this subject in the following statements: "In the vast majority of indigenous peoples, the bearer of land ownership is the loose extended family . . . This form of land ownership is characterized as the oldest by the fact that it is found in *all* subgroups of primitive culture, predominating in some and taking a back seat in others."

Sovereign land ownership provides the strongest element of statehood in indigenous culture through its fixed definition in space and time. In space, the boundaries of this territory of indigenous culture are artificially marked only in a few cases—for example, among the Maidu tribes, where they are even patrolled by archers. But there are definite, natural boundaries formed by rivers, mountain ranges, valleys, etc., which are known to the inhabitants of the territory and recognized by their neighbors. In terms of time, this territory is never and cannot be relinquished, not even in parts; only temporarily are individual sections granted to a neighboring tribe for hunting and gathering when their own territory has also temporarily become scarce in wild animals and plants.

Although these extended families and their territories are so strongly, clearly, and permanently demarcated from one another, they are not isolated from one another. Compulsory exogamy alone causes them to cross these boundaries and establish connections with other extended families and individual families within them. In specific cases, these

connections to the mother's family; and since, in the family of the primordial culture—where men and women are considered equal—kinship relations originate equally from both the paternal and maternal sides, the relationships to the mother and her brother are not to be understood here as manifestations of matriarchy, but are entirely part of the nature of the primordial cultural family.

Other relationships within this extended family arise through friendly visits, which at least some of its members pay to one another, exchanging lavish gifts in the process. The primary purpose, however, is not economic gain but the demonstration of mutual friendship; yet under certain conditions, this exchange of gifts could evolve into actual trade. We know of such gift-giving visits among the Adaman Pygmies, the Northern Maidu and Wintu Indians in north-central California, the Selish tribe of the Coeur d'Alène, the Kulin in southeastern Australia, the Bushmen in South Africa, the Yamana in Tierra del Fuego, and the reindeer-herding Inuit in Canada, so that these forms of relationship appear to persist across almost the entire territory of primitive culture; only the African Pygmies are not represented here so far.

g. WAR AND PEACE IN THE STATES OF PRIMITIVE CULTURE

So far, we have encountered two types of relationships of a thoroughly peaceful, even friendly, nature between the states of primitive culture. Among them, marital relationships are the more common. For under the existing system of obligatory exogamy, such ties are reestablished with every new marriage. They become more closely knit between two groups when, for specific reasons, marriages are contracted only between those two groups. Usually, tribes that are linked by marriage also come together for coming-of-age ceremonies for boys and girls. Thus, these marital ties are of great significance for the mutual relations among these small states of primitive culture, and they were certainly also important for the question of war or peace. Generally speaking, however, the theory of *bellum omnium contra omnes*—the war of all against all—applies least of all to primitive culture.

First of all, a war of conquest—a war aimed at seizing foreign territory—is virtually impossible in primitive culture. In my work *Property in the Earliest Stages of Humanity*, I was able to discuss only two cases of this kind, both in southeastern Australia and in the

peripheral region of primitive culture influenced by the neighboring warlike totemic culture, and even here, in one case the matter was settled amicably, while in the other it was limited to a mere duel between two warriors. Ownership of the territory is sacred; in some tribes it is bestowed by God, in others by the tribal ancestor or a later cultural hero.

E. K. Man reports on the Andamanese Pygmies' good behavior even toward strangers once communication has been established. Radcliffe-Brown states that skirmishes are always carried out as surprise attacks; they are halted if even one of the attackers is killed, and after one or two skirmishes, peace negotiations are initiated by the women of the two warring parties. Among the Northern Andamanese, a moving ceremony is then held, through which not only is peace concluded, but enemies are turned into friends. Among the Semang Pygmies, war is so rare that their researcher, P. Schebesta, does not write a single word about it. M. Vanoverbergh attests to the very peaceful nature of the Negritos of northeastern Luzon. He considers fighting among the Negritos themselves to be out of the question; they get along very easily when they meet and stick together. As for the Central African Ituri Pygmies, P. Schebesta does emphasize their initial shy distrust; but as soon as the stranger's good intentions are recognized, they show trust and affection. He himself received a general honor guard upon his departure, and the women sang of him as their "child." The wars they wage are defensive wars against Blacks and Whites who invade their territory without permission, and in these they fight tenaciously and bravely. P. Trilles makes the same assessment of the Gabon Pygmies; he, too, considers wars among the Pygmies to be out of the question. If a member of one group killed a member of the other group, this did not give rise to war, but rather to a meaningful atonement ceremony in the presence of both groups, and the murderer must hand over a young girl to the group of the slain, who is then integrated into it.

Among the pygmoid Wedda, defensive battles against intruders into their territory may well occur; their own disputes over territorial boundaries are settled through a simple ceremony. G. C. Wheeler confirms this not only for southeastern Australia but for Australia as a whole: "Territorial conquests are never sought, for the absolute right of local groups to their territory is fully recognized." As the final conclusion of his research in Australia, G. C. Wheeler states: "In contrast to the far-fetched ideas that have been put forward on this subject in

general, war among these tribes cannot be regarded as the normal state of affairs. Rather, the usual method of settling disputes—even in cases of murder—between local groups is one form or another of regulated justice . . . One does not go beyond the available evidence in asserting that peace, not war, was the normal state of affairs among the Australian tribes." Regarding the third tribe of the southern group, the Yamana of Tierra del Fuego, M. Gusinde does indeed attest to their sensitivity and their personal disputes, which occasionally lead to murder—an act that here can only be atoned for through blood vengeance; "but it would be entirely mistaken to assume that this . . . tribe is constantly at war with its peers. By nature, they are anything but quarrelsome. They are by nature neither warlike nor combative." The situation is different with the neighboring, tall Selknam (Ona); they are warlike by nature and carry out raids on other tribes.

In all the indigenous cultures of North America, war has taken on greater significance; this is evident from the fact that in most tribes, alongside the actual "peace chief," there was also a "war chief," who, of course, was appointed only for times of war and military operations and did not interfere with the peace chief's duties.

However, the fact that war gained greater significance here is largely attributable to the later incursion from the south of powerful, warlike, even bloodthirsty tribes into the territory of the indigenous culture—such as the Iroquois, the Sioux, the Pawnee, and the Shoshone—who propagated the idea of war.

J. Curtin recorded a detailed and literarily beautiful myth from a tribe of the North Central California group, the Wintu Indians, about the first war on earth, which was caused by a beautiful woman named Norwan ("Southern Woman"), who, having been invited to a grand dance festival, joined the two best dancers and left her husband. The back-and-forth war, which lasted two days and ended in a stalemate, is masterfully described in every detail; however, the final judgment expressed by the myth itself is: "This was the end of the first war on Earth. No one gained anything, and many were killed. Later, there was another war among the first humans, and after that, many more." And the woman who had become the cause of the first war confessed: "I did wrong. When I think about it now, I realize that I did wrong . . . If I hadn't danced with the brothers and left with them, if I had gone to the dance with my husband, there would have been no war, no killing, and no cause for strife in the world . . ."

In primitive culture, women are indeed one of the most common causes of strife and discord. This becomes understandable when one considers

that in these societies young men and women have free choice in marriage, but that of the several suitors for a young woman—who may already quarrel among themselves—only one can take her home, since monogamy prevails. Precisely because marriage is based on mutual affection, jealousy between spouses could be all the greater; indeed, P. Schebesta reports that the Ituri Pygmy women are much more jealous than the women of neighboring African tribes, who are more inclined to adhere to the alluring principle: "Tout comprendre, c'est tout pardonner."

Looking back on what we have learned here about peace and war in primitive societies, we can draw the following conclusions: First, no people of ancient cultures are warlike or fond of war; second, none of them wage war involving large-scale battles and heavy, bloody casualties; third, war casualties are not avenged through ceaseless new wars, but rather amicable peace treaties are the norm, intended not only to end hostilities but also to foster friendship; fourth, it is not war but peace that is the normal state of affairs, interrupted only rarely by war; fifth, even blood vengeance is not yet a universal practice here; rather, the rule is an amicable settlement without bloodshed.

h. THE AUTONOMY OF THE FAMILY IN RELATION TO THE STATE

In this work, more attention and space are devoted to the family of primitive culture than is usually the case in ethnological and sociological works. Here, for once, the findings of the last decades of research on the origin and development of the human family—which have painted an entirely new picture of it—should be taken seriously from all angles.

In this picture, the perfect naturalness of the family in primitive culture presents itself to us in fundamental details. First is its monogamy, the only natural form of marriage, because it alone corresponds to the biological law of an equal number of male and female births—a law that may well be disrupted by human arbitrariness but cannot be abolished. Second is the freedom of both partners in the choice of a spouse; it corresponds to the natural inclination of the two sexes toward one another upon reaching maturity—an inclination that the two young people can follow unhindered here in primitive culture. This inclination can arise more easily and more strongly here because, under the conditions of local exogamy, young people experience maturity in its fullness rather than in its slow development, and thus the

opportunity for moral idealization. Furthermore, there is the equality of men and women, based on free choice in marriage and, subsequently, on the equality of their contributions to economic existence.

In this naturalness also lies the deeper reason for the greater stability of the marriage of the primordial culture, which was already protected by public opinion, and even more so by the natural fruitfulness of marriage itself, which brings forth children who then form the strongest bond through which the parents are bound together here forever. With the children, the parents' happiness and inner satisfaction —which they had already received to a great extent through their mutual love—also increase, and the close bond with their children, whose physical and spiritual development takes place before their very eyes, protects them from premature emotional aging and grants them a longer-lasting youthful vigor, energy, and confidence.

Thus, at the dawn of humanity's social development, the family stood in natural autonomy and stability—an institution that satisfied not only economic needs but also the spirit and the heart, and instilled in parents a range of social virtues. For their part, parents, through the physical, economic, and moral upbringing of their children, prepared a future for the human race that also encompassed the progress of culture—already evident in the slow but real growth of the human population.

Despite all the independence and autonomy that the individual family exhibits in primitive culture, we must nevertheless acknowledge the fact—which has not yet been sufficiently appreciated—that no individual family lives and functions on its own, but always only within the broader framework of the extended family. On the one hand, this interconnectedness provides protection and security for one's own existence, especially in times of need; on the other hand, however, an inner subordination of all individual families to the state becomes evident here. This orientation toward a larger social structure is already evident in the extent of the parents' natural fertility, which is not directed toward the reproduction of merely the two parents, but significantly exceeds this number, thereby enabling and requiring the founding of ever-new families.

i. THE STATE OF PRIMITIVE CULTURE AS THE BEGINNING OF ALL STATE DEVELOPMENT

Of the indisputable characteristics of a state, at least one is clearly and definitively present: much to the surprise of some

theorists of the state, it is its own territory—the sovereign possession of a clearly defined area of the earth's surface. It has already been made clear above (p. 405) that the bearer of land ownership is the (loose) extended family, neither a larger nor a smaller social unit. No later state has ever possessed territorial ownership of this kind; it combines the distinctive characteristics of the *dominium altum* and the *dominium privatum* and, in this form, precisely reflects the conditions of that time, forming the basis of these people's economic existence. The unified cohesion of all individual families, however, is secured against all fluctuations by the common territory, whose sovereign owner is not the individual family but the extended family.

The greatest difficulties in recognizing the extended family of primitive culture as a state likely stem from the nature of this structure's leadership, which is extremely weak in a number of tribes and seems to be entirely absent in others. The latter would be the case where there are no chiefs, as among the Asian Pygmies and the people of Tierra del Fuego, from whom the Maidu and perhaps also the Yuki are not too far removed (see above, p. 403 ff.). And yet, even among these tribes, there is no confusion, arbitrariness, or lawlessness, but rather a relatively calm order that arises from an inherent sense of the self-evident—a fact that, however, seems almost inexplicable given the strong love of freedom and the volatile temperament of most of these indigenous peoples, which would seem to call any stability into question.

Here, most researchers completely overlook a power that is at work. They were also unable to perceive it because, according to the evolutionary theories that had prevailed for so long, a morally oriented Supreme Being could not possibly have existed among these most ancient peoples. The fact that, on the contrary, it is precisely among these peoples that such a divine figure is believed in and worshiped has since been confirmed by in-depth and extensive research. This will be discussed in greater detail later (below, p. 455 ff.).

According to the beliefs of the peoples of primitive culture, this Supreme Being established monogamous marriage (see above, p. 393 ff.) and the rest of the social and moral order at the very moment of creation; with His omniscience, He watches over their observance, punishes their violation, and rewards their observance in this life and the hereafter; children are taught these principles already within the family, and they are instilled particularly deeply in young people during their coming-of-age ceremonies, the initiation rites for boys and girls

(see below, p. 497). This Supreme Being now exercises quiet but effective leadership even over these chieftainless tribes. This leadership is tacitly recognized by public opinion, and even violations of His commandments—which do occur from time to time—cannot call it into question.

It is the only power that claims authority even over the extended family—indeed, over all extended families, however many there may be. The parental authority over their children is not felt to be in opposition to this universal authority, but rather derives from it, and the worst punishment that the supreme commander can impose on parents among the Firelanders is the death of their children. This authority is effective not only among the chieftainless tribes but also extends far into the other tribes, where it is recognized even by the chieftains themselves, who frequently invoke it.

Since it does not merely impose formal social laws, but also establishes profound and formal precepts and demands inner attitudes and vivid emotions, these small states of primitive culture thereby acquire a strength and depth that one searches for in vain in many later, larger states. Further evidence that governance here is based on moral principles lies in the fact—already emphasized earlier (above, p. 404)—that most of the qualities required of a good chief are of a moral nature.

Thus, while the extended family of primitive culture cannot be denied the character of a state, it must certainly be acknowledged that this state is closely connected to the family, that it is nourished by familial forces and thrives on them. On the other hand, it must also be said that the family, even in its earliest stages, does not exist in isolation, and that alongside the individual family existed the state of the extended family, which encompassed and nurtured the individual family. If it is true, then, that the family came into existence at the same time as humanity, the state was also present from the very second generation onward, never to disappear again. This refutes all theories that posit the state as having arisen only later, whether through peaceful or violent means.

Proponents of the first approach posit that the state comes into being through a voluntary contract, in which the contracting parties renounce a portion of their rights so that they may better protect the remaining portion.

This theory itself did not arise through peaceful means; it emerged from the very vigorous opposition of Calvinist elements against absolutist princes; like its first proponent, Hubert Languet, he had to publish his book with the provocative title **Vindiciae contra tyrannos** under the pseudonym Stephanus Julius—and, though a Frenchman himself—in Basel and Edinburgh in 1547. In Germany, Johann Althusius followed him in this same theory in 1603. The two scholars of international law, Hugo Grotius (1625) and Samuel von Pufendorf (1672), also subscribed to this theory, as did the political philosopher Baruch Spinoza (particularly in his posthumous **Tractatus politicus** of 1673). While this school of thought is generally democratic or even republican in orientation, Thomas Hobbes (1642 ff.) advocates for absolute monarchy, a position that is, however, emphatically opposed shortly thereafter by the bourgeois-minded John Locke in his treatise **On Civil Government** (1689). While this social contract theory faded in England during the 18th century — David Hume and Adam Smith adopted natural-law theories —, it flared up most powerfully in France in the mid-18th century in J. J. Rousseau's **Contrat social** (1762), who was, from a historical and philosophical standpoint, the weakest but, rhetorically, the most effective proponent of this theory; In Germany, Immanuel Kant also joined him and Locke in this view.

Some later forms of the state may indeed have arisen in some way through contract; but not the earliest forms of the state at all.

According to a second theory, the state arose through force—more precisely, through the subjugation of a majority by a (militarily or economically) better-organized minority.

This theory did indeed have an advocate as early as the second half of the 18th century in Nic. Linguet's work **Théorie des lois civiles ou principes fondamentaux de la société** (London 1767) and, somewhat later in Germany, in Herder's **Ideen zur Geschichte der Menschheit** (1782), which regards the state as a product of violence and therefore as "unnatural." However, it did not gain wider acceptance until the last quarter of the 19th century and the first decades of the 20th century, initially through L. Gumplowicz in his works **Race and the State** (1875) and **The Sociological Concept of the State** (1892). His most significant students include G. Ratzenhoffer, with his three-volume work **The Nature and Purpose of Politics as Part of Sociology** (1893), and Fr. Oppenheimer in his work **System of Sociology; Vol. I: The State** (1926). France also had a later proponent of this theory in Léon Duguit, author of **L'État** (1901, 1903) and **Théorie générale de l'État** (1911).

To all these proponents of the theory of violence, it must likewise be said that, certainly, in the course of history, states—especially large states of advanced civilization—have arisen through violence; but when it comes to the very beginnings of the state, the theory of violence must be rejected even more emphatically than the theory of contract.

We have seen that the state does not arise only later, but that it is already present from the very beginning in a very simple, natural form. It will later undergo changes—even in primary cultures—including some brought about by contract and others by force; but these are not the initial forms of the state per se, but merely changes to the state that already existed.

2. THE ECONOMIC MANAGEMENT OF PRIMITIVE CULTURE

a. THE FAMILY AS THE FOUNDATION OF THE ECONOMY

During the reign of evolutionism, when the aim was to push the earliest humans as low and as close to the animals as possible, this was also to be implemented in the economy by denying these peoples any real economic management whatsoever; rather, as K. Bücher still stated in the tenth edition (Tübingen 1917) of his widely read book **The Origin of the National Economy**, they were granted only a "stage of individual subsistence."

However, we have seen (above, p. 401 ff.) that not only does the individual not exist in isolation, but neither does the nuclear family; for this reason alone, a "stage of individual food gathering" is ruled out for human beings. Bücher also seems to have completely forgotten that there were not only adults who might have been capable of engaging in "individual subsistence," but also children of all ages, who—unlike animal offspring—remain in a state of immaturity for so long that they certainly could not have eke out a living through "individual subsistence" before the age of 15. Bücher has also overlooked the fact that, for these children who were still incapable of "individual foraging," certain adults—the children's parents, who constituted the majority of a group's members—engaged not in "individual" but in, so to speak, collective foraging, gathering food not only for themselves but also for their children. This, however, is not an individual but a familial foraging activity, in which the children also begin to participate as soon as they have grown old enough.

This leads to a natural transition from the chapter on the social structure of primitive culture to its economic organization: it becomes clear that, in addition to its other significant tasks, the family must also fulfill the new and important role of being the bearer of the economy.

First and foremost, this is the nuclear family. Father and mother go out every day in search of food, not only for themselves but also for their (still minor) children. They do not go together, since the objects of their food-gathering are quite different for each of them, as we shall see, but each goes their own way. What they find is the result of their labor and thus, according to the principles of primitive culture

(initially), their personal property. Neither of them, however, consumes it for themselves; rather, both bring the food they have gathered to the camp, to the hut that each family owns; it thus becomes family property, which is then prepared by the woman and consumed by the entire family in a communal meal, as is customary in primitive culture.

To a certain extent and indirectly, the extended family is also the bearer of the economic order in that, as we have heard (above, p. 405), it is the bearer of land ownership. Only on this land—and not just anywhere—can the individual families belonging to the extended family go out in search of food; only this land provides them with the necessary food. But the extended family is also the foundation of economic management in yet another way. Namely, as we shall see in greater detail later (below, p. 457), it provides social welfare for families with a particularly large number of children, as well as for the elderly and the sick who have no children to care for them adequately. For this purpose, young, unmarried men (and women) in particular are called upon; they must contribute the majority of their hunting (and gathering) proceeds to such needy individuals, even beyond the scope of their own nuclear family. The extended family also plays a role in economic management through the men's collective hunts, whereas collective plant gathering by women is rare. After all, it is the extended family that determines when a particular area of the territory has been exhausted and no longer yields food, necessitating a migration to another part of the territory.

Br. Malinowski (1910) and A. Knabenhans (1917) have clearly demonstrated that, for example, the Australian family constitutes an economic unit within which the production and consumption of food take place; had they, as would have been necessary, determined the ethnological age of the individual tribes, the result would have been even clearer. This is clearly evident in the differences in the distribution rules for hunting spoils among Australian tribes. Among the Kurnai, the Eastern Kulin, and a portion of the neighboring Yuin—all of whom belong to the proto-culture—the family takes center stage, with the larger and better portion going to the parents and in-laws and the smaller portion to one's own nuclear family. In contrast, among the Western Kulin, the Wiradyuri-Kamilaroi, and another part of the Yuin—who have already shown a greater degree of mixing with later cultures—the focus is not on the family but on the tribe, with the spoils distributed equally among the individual members

; only the hunter himself receives the smaller and inferior portion. Among the Pygmies, such distribution rules do not exist; they are unnecessary there because a spirit of generosity, particularly with regard to food, prevails among them anyway (see below, p. 461).

b. THE GATHERING ECONOMY OF PRIMITIVE CULTURE

Attempts have been made to describe the economic system characteristic of primitive culture using various terms, none of which, however, is entirely satisfactory. One of the oldest and most widespread terms is the one I have used in the heading of this section: gathering economy (French: cueillette); it fits well with women's activities, but less so with men's hunting activities. Fr. Kern and O. Menghin have introduced the term "hunting *and* gathering" *[for the earlier hunting and gathering economy]*. A third term, "appropriative economy," is grammatically flawed, since there is no verb "to appropriate," but only "to appropriate oneself"; the difficulty would be resolved by a term such as "receptive economy."

This, in fact, is the distinctive feature of the economic stage of primitive culture: it receives what nature produces of its own accord, spontaneously, without human intervention, in the animal and plant worlds. Here, humans do not yet intervene in nature's production by regulating and enhancing it—through animal breeding for animals or plant cultivation for plants. The tribes of primitive culture are thus so entirely dependent on nature that one might most appropriately call them "primitive peoples," were it not for the fact that this term is already in use elsewhere (see W. Schmidt and W. Koppers 1924, p. 41 ff.). Some ethnologists regard this stage of the gathering economy as the "lowest" cultural stage with considerable disdain; one of them even describes it as "parasitism." We will offer an appraisal of the economy of primitive culture at the end of this chapter; but here it suffices to mention briefly that it would indeed have been very foolish for those earliest humans to toil in hard labor when nature offered them abundant food without any effort; for at that time, on the vast earth, which was still sparsely populated, they had no need to seek out barren regions; sufficient rich and fertile lands stood open to them.

It was therefore entirely natural that the earliest humans began with a gathering economy and remained in it for many tens of thousands of years. As late—

primary cultures later turned to animal and plant husbandry to manage nature's production (see p. 388), they did so not out of a conscious, ingenious striving for progress, but driven by necessity, because they had found themselves in regions where nature no longer provided a bountiful table. It was, however, already a remarkable achievement for the people of that time to locate the animals and plants that sustained their lives, to learn how to prepare them, to create clothing and shelter appropriate to their circumstances that covered and protected them, and to fashion a number of tools that aided them in this work. In this respect, they are superior to the people of all later cultures: for in this primitive culture, every individual is capable of satisfying all his own needs on his own; he is, to a greater degree than they are, a fully developed human being who masters life on his own, not a narrow-minded specialist who depends on a long line of other specialists for his livelihood.

But since food—especially game—is in the hands of the Creator, who gives it but can also withhold it, He does the latter when His gifts are abused and game is killed or plants are uprooted needlessly and arbitrarily. Thus, an old Samoyed rebuked another who had needlessly pursued a polar bear and met with an accident in the process: "You already had enough food. What Num (the supreme being) had already sent you would have been enough." Among the Yamana of the Firelands, too, it is taught that their supreme being, Watauinewa—"the Ancient One"—is the lord of all things, but especially of animals and living creatures, which must be spared and not treated arbitrarily or even destroyed; they belong to Watauinewa.

The nomadic lifestyle of primitive cultures—in which, when the supplies of wild animals and plants in one place are exhausted, the people set out for another location within their own territory—also stems from this principle of conserving food resources; for the migration is not undertaken only when there is absolutely nothing left in that place, rather, overexploitation is avoided, and a sufficient remnant of animals and plants is left behind so that, after a certain period of rest, the former abundance is restored. We know this explicitly from the Northeastern Algonquins. An Ojibwa chief reports on this: "Wherever they went, the Indians took care of the wildlife, especially the beavers . . . Thus, these hunting families never think of harming the abundance or the source of new wildlife; for this is what they have inherited from their fathers and grandfathers and those before them. The white man, on the other hand, needs to be monitored. He

walks through the forest and kills whatever he finds, whether he needs the meat or not. And then, when all the animals in a given area have been killed, he gets on the train and goes elsewhere, where he can do the same thing."

c. THE NATURAL DIVISION OF LABOR BETWEEN MEN AND WOMEN

Competent observers who have been able to compare the peoples of primitive culture with those of primary cultures unanimously emphasize the superior status of women in primitive culture; W. Skeat, speaking of the Semang Pygmies, is led to ask: "Could it be that the actual oppression of women begins only at an advanced stage of culture?"

Admittedly, the division of labor between men and women does not entail an external, mechanical equality—which would be particularly detrimental to women—but rather a division of labor that is perfectly adapted to the distinctive characteristics of both sexes and is therefore natural. The following brief list makes this readily apparent.

The man's task is hunting, whether individually or in groups; furthermore, the manufacture of bows and arrows, spears, or blowguns, where the latter are used. In addition, it falls to him—if necessary—to build a boat or raft. Finally, he is also responsible for gathering honey, which involves climbing the tall trees where wild bees make their nests.

In contrast, the woman goes in search of edible roots, fruits, and vegetable leaves. She must gather wood for the fire, as well as water for preparing meals, which is also her responsibility. Her responsibilities also include caring for the children—especially feeding the infant—setting up the dwelling, occasionally fishing and gathering small animals, and weaving mats and baskets.

It is clear from the outset that, simply because of her pregnancy and her young children, the woman cannot reasonably be expected to hunt—especially since hunting here involves large and fast animals. It is no less clear that the man, being free from these burdens and possessing greater physical strength and agility, appears to be ideally suited for hunting, and he is in fact described by all observers as an unsurpassed hunter, wholly devoted to this task with body and soul. The tension, excitement, and constant variety, the mortal dangers, and the success in securing prey that these hunts entail almost strip them of the character of work and give them the nature of sport, even though the patience and endurance that the hunter must—

and the incredible efforts he must undertake place high demands on his physical and mental capabilities.

As the woman gathers plants, she has a quieter and more peaceful task. The plant is rooted to the ground and does not escape the gatherer. In carrying out this task, she herself faces no danger, unless she stumbles upon a snake or some other creeping predator. Just as knowledge of hunting animals, their habits, and characteristics holds a certain appeal for the man—that first zoologist—so too does the growth, flowering, fruiting, and other developments of the plant world throughout the seasons exert a similar fascination on the more tranquil woman—the first botanist. But caring for the children, preparing meals after the strenuous task of gathering plants, and erecting the dwelling hut upon the completion of the journey impose additional work upon her, while the man, when he returns home from the hunt, can rest. It should be noted, however, that especially in primitive culture this division of labor is not mechanically rigid but rather flexible. Among the Andamanese, for example, the man helps the woman care for the children, especially when they are sick, and tends the fire. He also gathers the necessary fuel; however, he is willing to fetch firewood and water only in the most extreme emergencies. Among the Wedda, one occasionally sees a man digging up yams. The Semang Pygmies, too, occasionally help the women gather plants. Among the Bushmen, even the boys are trained and initiated not only in hunting but also in gathering plants as part of their initiation rites.

The quantitative contribution to food procurement made by men on the one hand and women on the other varies greatly among the individual tribes. In general, it can be said that the farther north one goes, the more the proportion of plant-based food—and thus the women's share of the workload—decreases. For example, in the northern part of North America, meat is estimated to account for three-quarters of the total diet, while plant-based food accounts for one-quarter; in the south, the ratio is exactly the opposite. In the extreme south of South America, where an Antarctic climate already prevails in the Tierra del Fuego, the diet consists primarily of marine animals (shellfish, crabs, fish, seals, sea lions, etc.), whereas the plant-based diet—consisting of berries, mushrooms, and wild celery—plays a secondary role. In contrast, P. Schebesta estimates that meat makes up only 20% of the Semang Pygmies' diet; they go hunting only when plant-based food is completely

. In Australia, too, plant-based food predominates, although in the southeastern region—which is considered the cradle of culture—meat consumption is likely increasing somewhat. P. Schebesta also estimates that meat makes up 40% of the diet of the African Pygmies of the Ituri; for the Bushmen, the percentage is likely lower. In contrast, among the Andamanese Pygmies living in the heart of the tropical zone, three-quarters of the diet consists of animal-based foods and only one-quarter of plant-based foods; a small group of Andamanese consumed 500 wild boars, 150 turtles, 20 wildcats, 50 dugongs, and 6 dugongs in a single year. The economic contributions of the spouses are not in competition with one another but complement each other, in that the husband claims a share of the plant food gathered by his wife, while the wife in turn demands her share of the meat prey brought home by her husband. A resolute Bambuti wife barred her husband from the "house"—since she is the "mistress of the house"—because he did not bring home enough game. Furthermore, in marriage, proficiency in procuring food constitutes an essential part of the skills expected of both prospective spouses, as vividly expressed in a "novellette" by the Bambuti Pygmies on the theme of "bride-seeking."

d. ANIMAL AND PLANT-BASED FOODS

Some ethnologists believe that the very earliest humans initially subsisted solely on plant-based food; for, they argue, for a certain period of time they would not have had weapons with which to obtain meat through hunting. However, this reason does not sufficiently support the aforementioned view; for there have always been small animals that can be caught even without weapons, such as shellfish, mollusks, termites, certain birds, and fish, among others.

It should first be noted that humans have never known any food derived from minerals or, indeed, from the dead earth; if some tribes —and certainly none of the primitive cultures—consume certain types of soil (such as the Otomak people in northern South America), they do so only as a delicacy or for medicinal purposes. Humans can use as food only those objects from nature that possess life within themselves, whether animal or plant life; but in order to consume them, they must first have taken their lives—a life that humans themselves could not have given them. These facts form the basis for the concept of the primal sacrifice, which in primitive culture is so

widespread, and to which we shall return when discussing religion (see below, p. 491 ff.).

As for the animal foods consumed in primitive culture, they were certainly numerous and varied in the early days, when the earth was still untouched, and remained so for many millennia, since the earth was sparsely populated and so vast and spacious that people did not need to be forced into areas of scarcity. Precisely because of this abundance, it is almost easier to say what they *did not* eat. Animals that themselves eat meat—such as most predators—do not seem to have been considered as food anywhere; nor was the dog—which, as we shall see, some tribes did not know as a domesticated animal—considered in primitive culture.

We have already mentioned the large numbers of small animals that could be hunted even without special weapons (see p. 420 above). The fact that these animals played an important and enduring role in the diet of some prehistoric peoples—especially those living along the shores of oceans, lakes, and rivers—is evidenced by the immense quantities of their remains found in waste heaps on the shores of Tierra del Fuego, California, and elsewhere. But humans also demonstrated their bold spirit of enterprise in that they already ventured to hunt large animals at that time—not merely gazelles, antelopes, roe deer, red deer, wild boars, and the like, but also great apes and elephants. However, primitive culture did not yet employ any kind of traps; the hunter captured his prey only through direct action, which resulted in immediate death to the extent possible; he thus avoided the potentially prolonged suffering of animals trapped in snares.

With the honey of wild bees or wasps—which the man is responsible for gathering—he provides a prized delicacy that can also serve medicinal purposes. He climbs the trees or rock faces where the bees have made their nests; the call of the honeyguide (cuculus indicator) shows him the way. Both Asian and African Pygmies have found an excellent way to protect themselves against the dangerous stings of angry bees. The Pygmies of French Gabon coat themselves from head to toe with the foul-smelling sap of the leaves of a species of Aristolochia, to which certain crushed berries and the sticky sap of an Amomum are sometimes added; the odor partly drives the bees away, and the stings of those that still attack are no longer dangerous. According to reports by both E. H. Man and Radcliffe-Brown, the Andaman Pygmies use the sap of an Alpinia species in the same manner.

The contribution that women make from the plant kingdom is, by its very nature, richer and more varied. For the most part, and from the earliest times, it seems to have been tubers and roots that women sought out. This is indicated by the tool specifically assigned to her—the digging stick, a stick tapered at the lower end, with which she digs up roots and tubers from the ground and which she occasionally also uses as a weapon for self-defense.

The Sarasin brothers report that among the Wedda, twice as many plant species as animal species—20 in total—make up their diet. N. W. Thomas states that the Australians consume about 200 plant species for food. In the diet of the Andaman Pygmies, however, animal species outnumber plant species. Among the foods gathered by women, many are also considered delicacies; these include the various fruits of shrubs—such as berries and nuts—and those of trees, such as (sweet) acorns and pine nuts. Women also find staple foods in the plant kingdom more frequently than men do in the animal kingdom—namely, the fruits of shrubs and trees, and wild rice, which the Algonquin women gather from lakes, swamps, and rivers by paddling along in boats and striking the panicles with flat clubs so that the grains fall into the boat. Here, the later cereal grasses with their mass yields are already foreshadowed. In fact, some tribes, under the influence of the matrilineal Iroquois who cultivate maize, have switched to crop cultivation; they also sow wild rice in their swamps and harvest the sprouted seeds, though without expending further labor on it, and production is not very extensive either. The Menomini, however, expressly refuse to sow wild rice and wish to live solely on the wild rice that grows naturally.

As for beverages, the primitive culture knows only water. In their original state, these people do not prepare any beverages from either honey or fruit, least of all intoxicating drinks. These are foreign to the primitive culture; where they are found among tribes of the primitive culture, they can soon be traced to the influence of later matrilineal tribes, in which intoxicating drinks originated. It is significant that in Australia, the gathering of the pijeri or pituri plant (Duboisia hopwordii) and its preparation by roasting—which is then mixed with acacia wood ash and chewed by both men and women—and, as N. W. Thomas says, induces a voluptuous, dreamlike sensation—is practiced precisely by the matrilineal tribes, the Dieri and Yantrawunta.

The tribes of the primordial culture also lack what seems indispensable to us:

seasoning for their food—salt. Where they live by the sea with its salty water, such as the people of Tierra del Fuego, this serves as a substitute. The Gabon Pygmies use a potassium chlorate derived from certain plants, but it seems to serve more for cleansing the intestines.

e. PREPARATION OF FOOD

The preparation of food for consumption is a task that falls to women in addition to gathering plant-based food. Evolutionary theory, which sought to place the earliest humans as close as possible to animals, therefore speaks in K.'s books of primitive humans who devoured their food raw. Advancing research has also relegated these "primitive humans" to the realm of myth. When it is claimed that Native American tribes in North America lived almost exclusively on raw food, W. Hough has already demonstrated that, on the contrary, eating raw food is only a rare exception. Even the Eskimos, whose name—given to them by their Algonquian neighbors (Odjibwe askimak)—means "raw meat eaters," only forwent cooking their food, especially meat, in emergencies. Thus, it can be stated with confidence that no tribe of primitive culture consumes its food raw, especially not meat; only certain fruits are eaten raw, and these are consumed in no other way throughout the world. Food is made edible for humans by fire, a topic we will discuss in greater detail later. Just as women prepare food over the fire, they must also gather and bring the fuel for the fire itself—wood—a task that men are particularly reluctant to undertake.

Over an open fire, meat is prepared by roasting, grilling, or braising, and what E. von Nordenskiöld says about South America —"The skewer is, of course, an ancient cultural element, certainly older than the 'roasting stand'"—can be extended to apply to all primitive cultures. As for plant-based foods, roots and tubers—with or without a covering of green leaves—are simply placed in the glowing ashes, beneath them, or on hot stones; meat and fish are also roasted in hot ashes.

But primitive culture also produced an "oven" in which food is prepared: food is placed in an earthen pit, which is then closed again. This is referred to as an earth oven; in the older form characteristic of primitive culture, hot ashes—which are enclosed within the pit—serve as the heat-generating element; in the more recent form, found among Polynesians and Melanesians and, influenced by them, among some Australians

In the traditional form of the earth oven, heated stones serve as the heat source, which naturally makes the process much cleaner. Ms. Graebner has documented its prevalence among the older tribes of Australia and Oceania; E. v. Nordenskiöld describes it in South America as "undoubtedly belonging to the very ancient cultural elements." Ms. Krause documents its use among the indigenous tribes of California and identifies it as belonging to the ancient northern hunter-gatherer culture; G. Stow finds it among the Bushmen. H. Trilles attests to its use among the Gabon Pygmies; J. David has documented it among the Ituri Pygmies; I have not yet found any confirmation of this in Schebesta's reports, but there would be no reason to doubt it. Unlike the African Pygmies, the Asian Pygmies do not know the earthen oven; the Andamanese have already adopted pottery from a matrilineal culture, and the Semang and the Philippine Negritos had bamboo vessels from an early period. The earthen oven is also absent among the oldest South American tribes, the Firelanders, where neither Gusinde, nor Koppers, nor earlier observers mention it. It is likewise absent in eastern North America, including among the Algonquins.

Primitive cultures generally do not practice cooking food. This is simply attributed to the fact that they had not yet mastered the production of clay vessels capable of holding water during the cooking process. However, the Andamanese, the Semang, and the Negrito Pygmies possessed a sealed vessel—the bamboo tube—in which they could also cook (see below, p. 438).

f. FIRE, ITS ORIGIN, AND ITS PREPARATION

Almost everywhere where food undergoes special preparation, it is fire that brings about this preparation, thereby making the food more palatable and easier to digest. Fire has become the universal companion of every human group, especially the family. It is therefore understandable that numerous myths deal with the origin of fire; among these, the best known are probably those that recount how selfish and envious gods withheld fire from humans, and how a human, alone or with the help of certain animals—especially birds—had the bold courage to rob or steal fire from the gods; the myth of Prometheus stands out among those of this kind.

Now, in actual prehistoric cultures, there is no Prometheus. Why? Because these people were too timid, too "cowardly"? No, but because

there were no gods here who would have denied them fire. On the contrary, it is the benevolent and caring father-god of primitive culture who entrusts fire to them or shows them how to produce it themselves. It is instructive in this regard to consider the Pygmies of the northern and central Andamans, who—as their pottery already indicates—are strongly influenced by matriarchy, which is why their supreme being is female, have myths about the theft of fire, whereas among the less influenced Southern Andamanese, whose supreme being is male (or rather, genderless), it was precisely this supreme being who gave them fire and taught them how to produce it. In exactly the same way, in north-central California, the Wiyot received fire from the Creator. Among the Maidu, when—after the Fall—the Creator altered the previously consistently mild climate and brought frost, rain, and fog, he gave them fire as a substitute to keep them warm. Among the Cheyenne, the Creator shows people how to produce fire by rubbing two sticks together or rubbing two stones together. Among the Ituri Pygmies, it is the Bandaka whose ancestral father, Tamba, came from the east and brought fire with him; he is descended from Mengo, the Supreme Being of the Bandaka. Among the Gabon Pygmies, there is a striking myth. It describes all the functions of fire and, not least because of its monumental language, deserves to be reproduced here in its entirety.

"People were no longer in the great camp of the beginning; God had withdrawn from them. There, one never felt hunger or thirst, nor did one ever feel heat or cold. One felt at ease everywhere. That was the happy time. I have already told you how we lost all of that; you will remember. One must always obey Kmvum (the name of the Creator), always do what he commands.

People had moved away from the great camp. Where were they? Everywhere. But they were not happy: they were hungry, they were thirsty, they suffered from the cold. They suffered from the cold, and that was the worst of it all. To keep warm, they covered themselves with leaves—that was not good. They were hungry: when they killed an animal, they ate it right away, just as it was—that was not good. They drank its blood while it was still warm—that was not good.

Then their chieftain at that time said to his people: "I will go call upon God." He indeed took his son and sacrificed him to God, saying: "God, I call upon you." And God answered: "Who is calling me?" The chieftain replied: "It is I, the chieftain of mankind." God replied: "You, the chief of the people, what do you want? You and I—we are two (different) things." The chief responded: "You and I—we are two (different) things. You—you are the Strong One. You—you are the One who has compassion. I—I am hungry. I, I am cold. At night I am afraid in my hut; we are all afraid, and the evil animals all come to seize our children. You did not intend to punish us with this.

God took pity. He said: "No, that was not my intention in punishing you. I will give you the red creature (lena, the fire), the living creature. It will stay with you; you will no longer suffer from hunger, you will no longer suffer from the cold. You alone

will have the red creature; living beings will fear it. When you have it as a companion in your hut, they will no longer come to seize your children in your hut. You will no longer be afraid at night, for the night will be like the day. So that you may always know that I have given you the red creature, you will hear my thunder, and you will then see the lightning split the sky in two. I have spoken.

He then gave them the red creature—fire. He showed them how it emerged from (pebble) stones, how to feed it, and what foods it loved. He showed them how to combine meat with the red creature so that it would be good to eat. He showed them: Now you no longer have fear. You will no longer suffer from the cold; you will no longer suffer from hunger. Go.

They replied: "We are no longer afraid, O Mighty One! We no longer suffer from the cold, O Mighty One! We no longer suffer from hunger, O Mighty One! To you, O Mighty One, we say: This is good! We thank you!"

You, too, have all seen it: when we offer the sacrifice to him, the fire consumes the animal we sacrifice. God has said this, and it is good."

Some indigenous peoples also have myths in which fire is stolen from malevolent beings who withhold it from humans: this is the case with the Efe Pygmies of Ituri, the Yuki Indians, the Wintu Indians, and the Buandik. Among other Kulin tribes, there is a hybrid form in which emissaries of the Creator wrest fire from the malevolent being and bestow it upon humankind; something similar may exist among the Kurnai.

The methods of producing fire are numerous and varied; all tribes of primitive culture know and practice one of them, so that they have all crossed this Rubicon, which unequivocally separates them from animals *[cf. J. Kälin, pp. 71 and 92; H. Breuil, p. 282]*. The Andamanese Pygmies are the only tribe that does not know how to kindle a fire. This was already reported by their first explorer, E. H. Man, and is confirmed by their most recent observer, A. R. Radcliffe-Brown. It is believed that they obtained their first fire from two neighboring volcanoes; they are now compelled to always carry fire with them. Among the South Andamanese, a myth recounts that their supreme being, Puluga, built a woodpile and produced fire by commanding the sun to set it ablaze, or by striking it himself (with a stick). Among the North Andamanese, the local supreme being, Biliku, produced fire by striking a red stone against a pearl oyster shell.

One method of producing fire is certainly among the oldest, as it is found in almost all regions of primitive cultures: *striking two stones together*. We find it among an African Pygmy tribe, the Gabon Pygmies, and among the two Tierra del Fuego tribes, the Selknam and the Yamana (they strike a flint nodule against

a walnut-sized piece of pyrite; a powdery fungus or feathers are used as tinder), among the Pomo in California (who strike two pieces of quartz against each other), among the Western Algonquian Cheyenne (who strike hard stones together, as instructed by the Creator), and finally among the Tasmanians (flint stones with tinder-like bark used as tinder).

The second most common method of fire-making in primitive cultures is *fire-whirling*: a hole is drilled in a stick lying horizontally on the ground and held in place by the feet resting on it; a stick tapered at the bottom stands vertically in this hole and is spun as quickly as possible with both flat hands. This method is practiced by the Wintu of north-central California, by the Halakwulup, a tribe in Tierra del Fuego where 3 to 4 men must take turns and require 20 to 30 minutes, by the Kurnai and Eastern Kulin (Wurrunjeri) of southeastern Australia, in the Philippines, and in California. A. Le Roy observed it among West African Pygmies; H. Trilles found it to be a more recent method among the Gabon Pygmies, where, however, the whirling was performed with the aid of a bowstring.

M. Vanoverbergh documents the *use of fire sawing* among the Negritos of Northern Luzon (a piece of wood or a vine is used to "saw" rapidly back and forth, either at a right angle against the edge of a piece of wood or along the outermost edge of an indentation made in the center of a log). P. Schebesta has also found this method of making fire among the Semang Pygmies. It remains doubtful whether the "rubbing together" of two pieces of wood among the Cheyenne and the Euahlayi of southeastern Australia can be included in this category.

We find the *fire plow* as a unique practice among the Tasmanians (a back-and-forth movement of a vertical, tapered-at-the-bottom rod in the longitudinal groove of a horizontally positioned piece of wood).

g. CLOTHING AND HOUSING. MEANS OF TRANSPORTATION

Clothing and shelter protect the human body from the elements and temperature fluctuations.

1. However, *clothing* may also have arisen from a sense of modesty. In fact, complete nudity is not common among the tribes of primitive culture, but only appears on a larger scale among later tribes. It is understandable that less clothing is needed in hot climates. But even here, the tribes of primitive culture wear at least some kind of loincloth—both men and women. This applies to the African Pygmies and the Bushmen,

as well as the Asian Pygmies; among the latter, the Andamanese men wear very little clothing, but the women never take off their belts made of pandanus leaves for a single moment; when replacing one, they remove the old one only after they have tied the new one around their waists. The same can be said of the North Central Californians; here, it is only the older men who often go naked. In Australia, it is precisely the region of the original culture—the southeast—where people are more clothed than in the other parts, where complete nudity prevails in some places. In Tierra del Fuego, among the Selknam, girls and women wear a small loincloth, which they do not remove even while sleeping; men often let their fur cloaks fall when they are alone or among themselves, but cover themselves with them in the presence of women and children. Among the Yamana, women and girls wear the same type of loincloth, which most men also wear in the same manner, albeit in a slightly larger form; in both tribes, older men are often careless about covering their genitals. Among the tribes of the indigenous culture, it was only the Tasmanians among whom men and women went about naked.

In winter or in colder regions, clothing naturally became more substantial, though in some cases it remained sparse enough even then. Among the people of Tierra del Fuego, for example, the fur coat is loosely draped around the body and is often left off even while hunting, even through ice and snow. In North America, the Algonquin tribes wear leggings, with each leg covered separately and both pieces fastened to a belt with cords; these are not part of the traditional attire of the North Central Californians. A primitive form of the moccasin is not to be counted among the indigenous culture but was introduced along with snowshoes and is not worn constantly, but only while hunting and traveling *[see K. J. Narr, p. 514; J. Imbelloni, p. 191]*. Leather sandals, worn occasionally, are also found among the Firelanders.

People of primitive cultures take the “clothing” of animals and trees as material for their own garments: from animals, the hide and fur—especially in the colder northern and extreme southern regions—and from trees, the bark—especially in warmer regions. However, both materials are processed only superficially; flesh particles are scraped off the hide, and the inner fibers are removed from the bark in the same way. However, the fur is not yet tanned to produce leather, nor is the tree bark beaten to produce tapa. Only among the Algonquin tribes do the beginnings of tanning appear. Any form of weaving is unknown to the tribes of primitive culture.

2. The form of *dwelling* reflects the nomadic way of life of the

peoples of the primitive culture, in its ease of both assembly and dismantling. One must therefore not describe it as "primitive" with a hint of contempt; it is functional here; any other form would be unsuitable and would therefore imply a lack of intelligence. In the primitive culture, we do not find the large-scale nomadism of the later primary culture of pastoral herders, with migrations spanning hundreds of miles, but rather the small-scale nomadism of hunters and gatherers, with migrations covering a few kilometers (see above, p. 403). The distance from the new location to the previous one—and thus the duration of the migration—varies, as does the length of the stay; it can last a few days, but also two to three weeks, though not much longer than that. For in addition to the ecological necessity of moving on, an inner urge to wander has also developed over time in the souls of these people, an urge they cannot resist.

The housing form of primitive culture is already adapted to this nomadism in that it does not progress beyond the hut form to the house form: the hut does not yet distinguish between roof and wall; it consists, in fact, only of the roof.

What is presented below regarding the various forms of housing is the result of my own research, which has not yet been published. According to this research, there are three main forms of dwelling in primitive culture: 1. a form that is round in plan and in structure, 2. a form that is rectangular in plan and straight-lined and slanted in structure, 3. a form that is round in plan and straight-lined and slanted in structure. The first is called the beehive or dome hut; it has undergone little or no further development in more recent cultures [see K. J. Narr, p. 512]; the second is the wind-shield hut; in the culture of matrilineal plant breeders, it has evolved into a rectangular house with a gabled roof, with or without a post foundation, or with a half-post foundation; the third form is that of the conical-roof hut, from which emerged, in the totemic cultural sphere of the advanced hunters, the roundhouse with a conical roof, and, among the herders, the similar tent-house. The beehive hut and the windbreak hut, by their very nature, are limited to the warm and temperate zones and are only occasionally carried into colder regions through migrations. Conversely, the conical-roofed hut is native to the Arctic (and Antarctic) zones but also reaches warmer regions during migrations.

Almost everywhere, it is the woman's responsibility to set up and take down the hut; according to the principle of ownership in primitive culture, the hut—as a product of her labor—is also her property.

The *beehive hut* dominates African primitive culture. It is found exclusively among the African Pygmies of the Ituri and Gabon, as well as among the African Pygmoids—the Baćwa and Batwa—and the Bushmen. In North America, it is found among the two older cultures that migrated from Northeast Asia to North America before the formation of the land bridge—now the Bering Strait—specifically among the Yuki and Maidu groups in north-central California and among certain Algonquin peoples (Naskapi-Montagnais, Ojibwe, Cree, and Menominee); Among the North-Central Californians, it evolved from the conical-roofed hut into the sunken earth dwelling and underwent a significant advancement in terms of construction and interior volume, as it became a more or less permanent winter dwelling here. Here, with regard to nomadism, it should be noted that when a primitive culture settles in regions with distinct summer and winter seasons, winter migrations are restricted, and the form of dwelling soon adapts accordingly. In South America, the beehive hut is found in the far south among the Yamana, Halakwulup, and Chonos; in certain parts of the Chaco; and in eastern Brazil among the Gez-Tapuya and neighboring tribes [see J. Imbelloni, p. 191]. In Australia, it is found in the southeast, south, and north, particularly as a summer dwelling; the beehive hut also appears as a summer dwelling in Tasmania, sometimes in a semicircular shape.

Among the Ituri Pygmies, the structure is built by inserting two flexible rods into the ground and then tying their tips together at the top; behind these, two more rods are placed in the same manner at increasingly narrower intervals; these rods are interwoven with one another by a rod running perpendicularly from front to back across their upper joints, with other rods running parallel to these on the right and left. The entire frame is covered with palm leaves. In other regions, the covering consists of grass, rushes, or pieces of bark; in colder regions, it consists of animal hides; there, an earthen embankment is also built around the base. In South America and Australia, there are instances where, instead of two rods tied together at the top, a single longer rod is inserted into the ground at both ends, thus forming an arch on its own. The sturdier winter dwellings in California have stronger and more complex structures and are covered with closely packed pieces of turf, which are then covered with earth, so that from the outside they appear like natural mounds. The beehive shape is also found in the ice huts of the reindeer-herding Eskimos, where blocks of ice are stacked one on top of the other in a serpentine pattern.

The *windbreak hut*—and only this type—is found among the Asian Pygmies: a rectangular wall frame is leaned diagonally along its length against a horizontal pole, which in turn rests in the forks of two poles driven vertically into the ground at the ends of the wall; the whole structure takes the form of a single-slope roof standing on the ground. If you place another single-slope roof against the open side of this first single-slope roof, with its open side facing the first one, you end up with a gable roof; if you then add a windscreen to each of the two gable ends, you obtain a hipped roof. The fact that this type of dwelling can be so easily rearranged in its individual parts and adapted to the direction of the wind ("windscreen") is perhaps the reason for its prevalence among the Asian Pygmies, where continuous and opposing wind directions (trade winds) prevail throughout the year, whereas the beehive huts of the African Pygmies are located in wind-sheltered jungle clearings. In South America, most tribes of the Chaco and the neighboring Puri-Coroados tribes in the northeast use beehive huts, as do some Pano tribes and other isolated tribes to the east of the Andes. In Australia, windscreen huts of a very primitive form appear to be built in the south. Their presence in Tasmania is doubtful. They are completely absent from the indigenous cultures of North America.

The third type of *hut*, the *conical-roofed hut*, originated and is primarily found in the Arctic northeast of Asia among the Northern Altaians, Uriankhe, Samoyeds, Yeniseians, and Tungus, and from there also spread to North America to the

Northeastern Algonquins and neighboring tribes, but also reached southern South American tribes at an early stage—namely, the Selknam of Tierra del Fuego and their Patagonian relatives, the Tehuelche and Puelche. This form consists of tree branches with their lower ends stuck into the ground in a circle, their tips meeting and supporting one another at the top. In summer, they are covered with tree bark; in winter, with animal hides; and at the base, the poles are covered all around with earth and turf. In the Arctic regions, this hut has a sunken area inside, the walls of which are prevented from crumbling by stakes driven vertically into the ground; this is further reinforced by horizontal rods that are wound around the vertical stakes (hence "wall") and connect them to one another.

The hut's shape, as the oldest form of dwelling, is also of great sociological significance and is closely related to the nuclear family; for each nuclear family has a hut all to itself; their life thus unfolds in their own hut, separate from that of other families.

As small as the huts generally are, they can be enlarged under certain circumstances. This occurs among the Yamana when they erect the ceremonial hut for their coming-of-age rite, which must accommodate a larger number of people; the expansion is achieved simply by planting many more arched poles in a row than in the dwelling hut. In the case of the windscreen, the enlargement is made possible by extending the diagonal length of the slanted windscreen and, to support this greater length, adding two or four new supports at the lower end, which must, however, be shorter than those at the upper end.

2. The small-scale nomadic migrations of the people of primitive cultures and all the journeys they undertook on their voyages of discovery into the wider world were made on foot, so that there can be no question of any *means of transportation* during these journeys, since they also carried the few belongings they took with them themselves. Water-based journeys constitute an exception, and even then, the available means were such that travel was possible only on rivers, small lakes, and along the seashores. A voyage across vast stretches of ocean remains entirely out of the question; this is an important fact that must not be overlooked when calculating the migrations of prehistoric humans and which, in some cases, greatly facilitates research.

The African Pygmies possess no watercraft whatsoever. Among the Asian Pygmies, the Andamanese borrowed their outrigger canoe (with a single outrigger) from the Proto-Austronesians of the Indian subcontinent; forest Pygmies also use rafts, and the Semang use bamboo rafts. No form of water travel is known among the Philippine Negritos. In north-central California, the Yuki have no watercraft whatsoever; among the Maidu group, the Wintus use reed-

balsa, while the Maidu themselves use reed balsa, wooden beam rafts, and rectangular, shallowly hollowed-out tree trunks—all three of which are used only rarely. The Northeastern Algonquians know how to build fur boats; in Tierra del Fuego, the two actual Tierra del Fuego tribes, the Yamana and Halukwulup, construct the oldest type of vessel—a boat sewn together from three pieces of bark; the Selknam possess no watercraft whatsoever, nor do their relatives, the Tehuelche. The same applies to almost all Gez-Tapuya tribes. In Australia, only the bark boat is found in the older regions—specifically, those made from a single large piece and those sewn together from several pieces. The Tasmanians, too, were familiar with the bark canoe assembled from three pieces, as well as rafts made from tree trunks. As can be seen, there is no uniform form of watercraft; there are only isolated groups of distribution, and even these are difficult to identify. In addition, there remains a large number of tribes on all continents that have no watercraft whatsoever.

h. TOOLS OF PRIMITIVE CULTURE

Because humans walk upright, their arms and hands are free, and thus they possess an invaluable means of action, enabling them to realize their will in an immeasurable variety of ways upon the objects of the external natural world, which includes even their own bodies. However, the arms and hands are part of one's own body, and their nerves and muscles are under the direct command of one's own will, which they obey even at the slightest prompt.

It is a distinguishing feature of human beings that they can expand the inner and outer scope of their hands' power of action, initially through objects in the external natural world that they take into their hands. He may have observed a causal process somewhere in the external natural world or experienced it firsthand; for example, while walking through the forest, a living branch strikes him in the face—a branch that the person walking ahead of him had pushed far from its original position and then suddenly allowed to snap back, so that it strikes the person behind him with force. The elastic force revealed here in nature has been used by humans to craft the bow for the arrow. Each time, humans have observed a cause producing an effect; they now take the cause into their own hands, and it becomes a means for them to achieve the effect, the end. But only a rational being is capable of transforming the relationship between cause and effect into that of means and end

. In German, we refer to these means by the term “Werkzeug”—an instrument for work, for action.

One of the oldest human groups from an ethnological perspective —all Pygmy peoples, both Asian and African—still live today in a pre-lithic age, an age of wood or bamboo, and are completely unfamiliar with stoneworking *[see H. Breuil, p. 269]*. Although they use naturally sharp objects such as shells or slate slabs to make their wooden tools and weapons, they do not work the slate slabs themselves, so that these cannot be described as tools in the strict sense. We have already seen ample evidence of how diverse—and indeed, relatively rich and advanced—their overall culture is despite the absence of stone tools, and we will continue to discover this, especially with regard to their intellectual and moral culture. If, for example, a massive natural disaster were to wipe all Pygmies from the face of the earth, after just a few millennia there would be no trace left of their entire culture, even though they once truly existed and played their part in human history.

When the Stone Age began, with the crafting of stone into tools, these were significantly superior to earlier tools in terms of hardness, sharpness, and durability. The production of stone tools thus represented, for that era, a technological advancement of equal genius and cultural significance to the later working of metals and other advances in human technology. All peoples of primitive culture, with the exception of the Pygmies, have already entered the Stone Age. At the same time, the Wood Age continues to a considerable extent, and in Arctic (and Antarctic) regions, the Bone Age also persists *[cf. H. Breuil, p. 270]*.

We cannot go into detail here about the various tools, as they vary greatly across the different regions of the Earth’s primitive cultures, depending on the climate and the abundance of natural resources. Incidentally, the number of such tools is limited, both quantitatively —since a large number of such objects would be incompatible with the nomadic nature of their way of life, which teaches them to avoid heavy loads—and in terms of the sophistication of their design. Thus, for example, one can state with considerable certainty that primitive culture did not advance as far as the important tool of the chipped axe. When L. Noiré said in 1880, in a somewhat excessive eulogy of the axe: “Among all the tools of prehistory, none is as important and marvelous as the axe. It is the tool par excellence; its appearance marks the boundary between two worlds,”

then primitive culture stands just before this boundary, and Noiré's "prehistoric era" is in reality a later period.

The simplest tool is the digging stick used by the woman who digs for roots, which is subsequently improved by hardening the tip in fire, selecting harder wood, and so on. Its use extends even into the earliest periods of matrilineal plant cultivation; for the oldest phase of plant cultivation is called the "digging-stick culture," because women still use the digging stick—which originates from the primordial culture—to weed.

i. WEAPONS OF PRIMITIVE CULTURE

The weapons of primitive culture are, to a greater extent than the weapons of later cultures, simple tools for hunting—that is, hunting tools—and were, at least in the earliest times, not intended as such for attacks on humans, nor for wounding or killing them. The fact that they were not directed against humans also seems to be evident from the fact that primitive culture knew of no defensive weapons—neither shields nor armor—that would ward off attacks by human weapons against humans. It also lacked stabbing and thrusting weapons intended for close combat, such as the dagger.

The simplest and most natural form of weapon is likely the branch of a tree, which can be used both as a close-range weapon for striking and hacking, and as a ranged weapon for throwing. From this natural branch or twig—which had been stripped of its side branches and leaves—the various types of club-like weapons characteristic of primitive culture emerged over the course of development. For only these types of clubs—not the club with a pommel—belong to primitive culture. Although staff clubs may also thicken toward the end, this occurs only through a very gradual increase, whereas in the club with a pommel, a thickening—a "pommel"—results from a sudden protrusion at the very end; the club-shaped club first appears in a primary culture—the matrilineal plant culture—and is immediately accompanied there by a protective weapon, the broad shield. Club-shaped clubs can have round, square, or ellipsoidal cross-sections; in the case of a square cross-section, the corners are usually intentionally sharp-edged; in the case of an ellipsoidal cross-section, they increasingly become flat clubs. They can also be straight or curved. The straight rod clubs have smooth or grooved sides; the curved forms are always flat clubs, and from them emerges the boomerang, as a simple throwing weapon and also in

the return form. Both the straight and curved forms of the flat club gave rise to throwing weapons when both ends—or one of them—tapered to a sharp point rather than a rounded tip.

Thus, the development of the club has achieved a great variety of forms. When we trace the occurrence of these forms, we do so best by taking into account the spread of an entirely different weapon of primitive culture —*one that, archaeologically speaking, is only attested among more advanced hunter-gatherers*— namely, the bow and arrow. It then becomes apparent that two major regions feature both types of weapons: the Americas—primarily South America—and Oceania; while two others have only one of them each: Australia has only club-sticks, and the African and Asian Pygmies have only bows and arrows *[cf. K. J. Narr, p. 513]*. The two main regions for the club-stick are Australia and South America.

The second type of weapon in primitive cultures, the bow and arrow, differs greatly from the club simply in that it is a ranged weapon; furthermore, the force of the human arm does not exert its effect directly but indirectly, by using the tension of the bow to trigger the elastic force, which carries out the direct effect; finally, a third difference is that it consists of two parts: the arrow, which directly causes injury or death, while the other part stores the elastic force within itself and is available to the user at the appropriate moment.

Fr. Ratzel conceived of the origin of the bow as having been invented only later, as an addition to the throwing spear. This is contradicted by the fact that we know of no Pygmies who would have used only a throwing spear for any length of time without the bow. Very recently, a Pygmy tribe was discovered in Spanish Cameroon—the Bagielli—which uses neither arrows nor bows, but rather a (long) throwing spear; but the fact that this small group stands alone in contrast to the entirety of African and Asian Pygmies, and that their territory represents an extremely small peripheral area compared to the rest of the vast Pygmy region, is unlikely to alter the overall picture in any significant way. In contrast, I have argued that the bow and arrow arose simultaneously as an organic whole. I have already explained earlier (see above, p. 432) that the elasticity of living branches and twigs served as the model and impetus for the invention of the bow.

This view is corroborated by interesting reports from both Radcliffe-Brown regarding the Andamanese and Schebesta regarding the Semang. The bowstave of the (semi-reflex) bow of the South Andamanese is cut from a specially selected tree that had been bent into a corresponding curve during its growth, and Radcliffe-Brown emphasizes that the greater tensile strength is achieved because the bow stick was bent together while still alive and growing, and that at this point the fibers of the wood have “become” stronger, tougher, and more elastic. The semi-reflex bow of the Northern Andamanese is also usually cut from a tree as a branch that was already curved, and for this reason it has the same draw weight as the Southern Andamanese bow. However, further reinforcement is achieved by the fact that the bow,

as soon as it is finished and strung, is held at its lower curved point over a fire lit in the maker's hut, which must burn continuously for some time, day and night; this fire acts, through the rising column of hot air and smoke, in the same direction as the curvature of the wood fibers at that point. P. Schebesta reports that among most Semang groups, the bow and arrow have now been supplanted by the blowgun, but among one group that still used it, he himself saw how a naturally curved branch was cut from a tree and then bent even further; after which the ends of the bow were joined by a string, but the string was drawn toward the side opposite the curve, so that it was actually a full-reflex bow with the increased draw weight characteristic of such a bow. Elsewhere, he reports that a small fire is lit right beneath the living, curved tree selected to serve as the bow stave, and the column of hot air and smoke rising from it causes the tree fibers to contract.

The bow and arrow had already undergone a fairly extensive evolution of forms in prehistoric culture, but this evolution is limited to a certain degree. In the case of the bow, attention must be paid to the cross-section of the bowstave and the preparation of both ends to accommodate the bowstring. The bow's penetrating power depends primarily on the shape of its cross-section. The round cross-section should be regarded as the oldest form, the one that most closely resembles the natural round shape of a living branch. It is found in the bows of the African Pygmies and those of the South American Gez-Tapuya and related peoples; however, the Pygmy bow is small, while the South American bow is man-sized or larger than a man, and it is also more carefully crafted. The round cross-section makes the bow strong and less prone to breaking, but this comes at the expense of elasticity and flexibility. The Asian Pygmies seek to compensate for this by halving the cross-section and, when using the bow, stringing and drawing it so that the former, now semicircular, side faces outward, while the straight, radius-shaped part faces inward toward the string; aside from the Asian Pygmies, this form is common among a second, more recent group of South American bows. While this bow is more elastic, it is also more fragile. The Andamanese, especially the Southern Andamanese, sought to counter this risk by shaping the inner side of the bow not as a straight line but as a convex curve, or by creating a pointed protrusion in the center; the latter form is found in South America in many bows of the Gran Chaco and reaches its highest degree of development in Tierra del Fuego, where it is essentially the same among all three tribes there, but is most fully developed among the Selknam. Here, the bow's shaft is not bent until after it has been painstakingly carved from a trunk as thick as an arm, with the youngest, most elastic wood fibers positioned on the outside and the older ones on the inside of the shaft, which facilitates the bending process, which is repeated several times. Here, too, the bow is brought near a fire several times, most recently for 10 to 14 consecutive days. A further stage of development would involve, in order to avoid the risk of breakage, reversing the previous convex side so that it faces inward rather than outward; this refinement is achieved in primitive cultures only in rare exceptions. However, a step in this direction has been taken by the South and North Andamanese with their semi-reflex bow, which exhibits this reversal of the cross-section on one half of the bow shaft; such a semi-reflex bow is also found among the pygmy-like inhabitants of the interior of the New Hebrides Islands in Oceania.

The design of the two ends of the bow is largely determined by the type of bowstring; if it was sturdier, made of rattan, as among the African Pygmies, a stronger support at the ends was necessary to prevent the string from slipping down; if the string consisted of plant fibers (or twisted pieces of fine bark), as among the Asian Pygmies and in South America, or of

animal materials, as in the Chaco, Patagonia, and Tierra del Fuego, such a stop is not necessary, and the widening of the bow's shaft toward the center is sufficient.

Among the Pygmies, the arrow has only a sharpened wooden tip. Among Asian Pygmies, flat, sharpened bamboo tips are also used; elsewhere, the tips are made of bone or flint. African Pygmies, the Semang, and the Negritos, as well as South American and North-Central Californian tribes, often coat the tips with poison, which quickly causes the death of the animal struck by it. Among Asian pygmies, the Yamana of the Firelands, and the North-Central Californians, the principle of the harpoon has been developed: the tip inserted into the shaft of the arrow detaches as soon as it penetrates the animal's body, but remains connected to the shaft by a long cord, which the **wounded animal then drags behind it**.

Another useful innovation in arrow design is its flight stabilizer. The arrows of the Andamanese lack such a feature. The African Pygmies achieve this by inserting a small piece of leather—or even just a leaf—into the tip of the arrow. The vast majority of primitive tribes use fletching for this purpose, specifically the two oldest and simplest types: ridge fletching and tangential fletching. Ridge fletching is so named because the feathers are attached only at both ends and rest against the arrow shaft like the arch of a bridge; The other type is called tangential fletching because the feathers lie against the outside of the arrow shaft's round cross-section like a tangent. Among the Semang Pygmies, where the feathers are almost entirely stripped of their barbs and are furthermore attached against the direction of the feather barbs, the "fletching" does not serve the purpose of ensuring flight, but is intended to produce a soft whistling sound that startles the animal, thereby holding it still for a moment and ensuring that the deadly arrow strikes its body all the more surely. In South America, the Guayaki and others produce the sound by attaching a pierced nut beneath the arrowhead; this idea has been further developed among the pastoral peoples of Central Asia.

Thus, it becomes evident that the basic principle behind the bow and arrow was already a truly ingenious one, and that this principle was effectively refined in its implementation through a whole series of further practical individual inventions. With the help of this hunting tool, the small, weak human was able to venture out from a safe hiding place to approach the largest and strongest animals, either to make them his prey or to protect himself from their danger.

Other devices for propelling weapons, such as the spear-thrower and the sling, no longer belong to primitive culture. They later made their way into individual regions of primitive culture, but only as foreign elements from more recent cultures.

k. TOOLS AND CONTAINERS. THE ART OF WOVEN CRAFT

It can be said that the number of tools among the peoples of the primitive culture is kept small with a certain degree of deliberation, because everything must be carried along on the constant migrations on people's backs—mostly those of women (since pack animals and carts do not yet exist). Thus, anything that is large and heavy in particular is left behind, even if it would be very useful. This is also made easier by the fact that the materials from which these tools are made are mostly found in abundance throughout

territory. This applies, for example, almost everywhere to the components of the hut and its bedding; therefore, when leaving a settlement, people simply leave the huts and their bedding behind, allowing them to fall into disrepair over time. The practice is somewhat different in certain parts of the Arctic, where wood begins to become scarce; here, the tent poles—or some of them—are taken along when the people move on, as are the animal skins used to cover them. In this region, however, the dog sled was later introduced to carry these heavy loads. The situation is similar with the bow. To make one, for example, the Andamanese use flat stones with naturally sharp edges, which are not yet true tools because they have not undergone any purposeful shaping; they are discarded after use, especially since they are available almost everywhere. If we add to this the fact that no special tools are required for the production of clothing—loincloths, hip skirts, or simple leaf belts—nor for the production of what is, in any case, sparse jewelry, this also explains the extremely small number of tools.

A certain difficulty arises regarding vessels; for primitive culture has not yet developed pottery, and metal vessels are, of course, out of the question. In regions where it grows, bamboo offers a certain makeshift solution with its hollow sections, each of which is sealed by a node that serves as the bottom of a vessel. The Semang Pygmies have taken advantage of this; they even use such vessels to cook their plant-based food. The Negritos of the Philippines have not resorted to this expedient; although one group among them practices the art of basket weaving, they do not use baskets to carry food and the like, but rather folded palm leaves. Among the people of Tierra del Fuego, a rectangular leather pouch sewn together serves as a “water bucket.”

The term “spiral-ribbed baskets” clearly highlights the type of weaving technique used. A supple, vine-like plant stem is laid in a circular spiral and interwoven with the preceding spiral using a plant cord running vertically or diagonally to join them. In Central California, however, three-strand spirals are also found. In the South Seas, these advanced forms also incorporate a technique in which the vertical or diagonal interlacing does not cross over the immediately adjacent coil, but rather the one after that, then the next one, and so on, alternating between the one after that and the next. By tightly interweaving the spirals, the Northern Central Californians create walls

waterproof; if anything is still missing, an adhesive is applied from the inside to help seal them. A porridge-like mixture of ground nuts or acorns is poured into such a basket, and a heavily heated stone is lowered into this mixture; the stone is kept in the center at all times using a special tool so that it does not come into contact with the walls and scorch them. The patterns on the walls of these baskets are created by interweaving strands of black or red thread against a white or yellow background. The elderly women who weave these baskets—or flat, plate-like structures—cling to the traditional forms of the ornaments with a strong artistic determination and do not allow "modern" forms to be talked into or otherwise imposed upon them by the white people to whom they sell their products.

3. THE LIFE OF THE SOUL IN LANGUAGE AND ART

a. THE NATURE OF THE LANGUAGES OF PRIMITIVE CULTURE

The social life of the people of the Primordial Culture did not consist solely of working, eating, living, and sleeping together; rather, the very soul of this society was their speech, through which they communicated to one another the innermost depths of their souls—their thoughts, feelings, and desires—and without which that other, more outward form of social life would never have come into being.

All people about whom we have reliable information—whether from the past or the present—possessed or possess a language worthy of human dignity, and this also applies to all peoples of primitive culture.

There have been authors who interpreted the extraordinary intellectual agility of many Pygmy tribes—their ability to exchange the languages of their neighboring, taller host peoples for their own—as evidence that the Pygmies had no language at all in the beginning; the most recent attempt of this kind is that of Professor F. Speiser of Basel. I have refuted this by pointing to facts that have been known for quite some time: 1. The Andaman Pygmies have preserved their own language, which shows no kinship with any other language, to this day; 2. Although the Semang Pygmies have adopted an ancient Austro-Asiatic language, a prefix formation not characteristic of that language and a number of their own important words prove that they formerly possessed a different language; 3. As for the African Pygmies, who, in the all-

have adopted older Bantu languages, P. Schabesta and P. van Bulck have now also identified a distinct language of their own; 4. Among the Philippine Negritos, a nightly ceremony is still held in which a prayer song is performed by men's and women's choirs; they understand only the general meaning of this song, but not the individual words and sentences, and these texts—the last remnants of their former language—show no connection whatsoever to the Indonesian languages of the tall Filipinos.

As for all the other peoples of the primordial culture—the Fuegians, the North-Central Californians, the Algonquins, the Selish, the Kurnai and Kulin, and the Tasmanians—there is no doubt that they still possess, at least in part, their ancient languages, which are entirely distinct from those of the more recent peoples. A particular kinship among the languages of the primordial culture is now hardly to be expected after the many tens of thousands of years of their separation from one another; in any case, a serious attempt to prove such a kinship has not yet been made; it would also have to be preceded by a thorough investigation of the individual languages, which has likewise not yet been undertaken.

On the other hand, the languages of the primordial culture all exhibit certain formal peculiarities that suggest their great age. It was a marvelous discovery for early humans when they realized how they could differentiate the sounds produced by their vocal cords through various configurations of the inner oral cavity—thus "inventing" vowels—and how they could produce additional consonants through certain maneuvers involving the lips, teeth, and palate. The languages of primitive culture had not yet exploited all the possibilities available here; they also left quite a bit for later languages to discover. Thus, people of primitive culture mostly spoke only the standard vowels a, e, i, o, u, but not yet the umlauts ü, ä, ö, which are still not known in all languages even today. More importantly, with regard to consonants, they have not yet developed the distinction between voiced and unvoiced consonants, but know only sounds that lie between b and p, d and t, g and k—sounds that untrained observers often mistook for one or the other and thus recorded accordingly. Finally, primitive man also does not yet know any fricatives—no f (w), s (z), or x (y).

In words, there are no clusters of consonants, at most the combination of a consonant followed by an r or l before a vowel (muta cum liquida). The final sound is never purely vowel-based, except in Tasmanian; otherwise, it can end in a vowel or a consonant

—in the southeastern Australian languages, even on combinations such as lk, nk, nt, and similar.

Even with these linguistic means, the people of the primordial culture are fully capable of fulfilling all the purposes of language: they form words, each of which represents a universal concept; they combine them into sentences that express a judgment; and they link these sentence judgments to conclusions based on causal reasoning. Thus, even these earliest humans were able to create profoundly meaningful works in their languages—myths, legends, and sagas—some of which, such as the myths of the Central California Indians or the Southeast Australians, can be regarded as the beginnings of world literature (see below, p. 443 ff.).

The simplicity of this language also ensures its greater ease and clarity. They do not yet assign specific affixes to their nouns depending on whether they denote persons or things, animate or inanimate objects, masculine or feminine nouns, or other categorizations. They are also still free from the constraint of having to ensure agreement between the adjectival affixes (of verbs, numerals, etc.) and those of nouns—a requirement that in later languages often gives rise to forms of burdensome, useless complexity, which modern languages such as English are only gradually shedding.

Numeral words, however, stand—viewed in absolute terms—at the lowest "stage" of development; I say "viewed in absolute terms" because a higher level of development would be of no value for their current practical needs. There are only numeral words for one and two; three and the subsequent numbers must be derived through compounds of these, and anything beyond five or six already constitutes the limit, meaning "many." We are speaking here of a pair system that undoubtedly derives from the paired parts of the body: two arms, two legs, two eyes, two ears. The sociological concept of the monogamous marriage may also have played a role here.

That the thinking of these earliest humans, while emotionally driven, is nonetheless logical—neither illogical nor pre-logical—was clearly established in the comprehensive discussion of the theories put forward by Lévy-Bruhl on this subject. Ethnologists who had conducted field research or had long been familiar with the ethnological literature rejected Lévy-Bruhl's theories. They found favor, however, with philosophers who had become ethnologists ad hoc. Ultimately, the creator of these theories, Lévy-Bruhl himself, abandoned them. While some elements of those theories may still hold true for certain later peoples, the peoples of primitive culture

the opposite must be said: magical thinking is relatively least developed among them. When P. Schebesta emphasizes the great significance of the Elima magical power among the Ituri Pygmies, it is, first of all, not yet certain whether it does not originate from the Negroes, and secondly, the Ituri Pygmies have already been made more receptive to these things through their very early connection with magic-imbued totemism.

Even if the thinking of the peoples of primitive culture is not particularly steeped in magic, but remains rational and logical in its basic orientation, their language nevertheless shows that it is emotionally charged and often steeped in emotion. It has already been shown (above, p. 441) that every word represents a universal concept; for example, the word for "house" does not refer to a single specific hut, but to the general concept of all huts in general. When, within this generality—which represents a generic concept—a specific new element, a differentia specifica, emerges to denote a smaller, particular group of houses, this can be achieved by adding another (affix-less) noun to it, as in the German word "Vater-Haus" (= father's house). Here in German, the genitive—as the specific differentia specifica—is placed before the word it modifies, and this placement is so inextricably linked to the German linguistic sensibility that the reversal "Haus-Vater" (the father of the house) immediately yields something entirely different. Do all human languages place the genitive in this way? No; Malay—and, similarly, all Indonesian, Melanesian, and Polynesian languages—place it after the noun: e.g., rumah tuwah, house (of the) Lord; mata hari, eye (of the) light = sun.

Placing the genitive first reflects a way of thinking that prioritizes the new and unknown in order to better grasp and appreciate it, while the old and already known—the genus—recedes into the background: this is affective thinking. Where, on the other hand, the genitive follows, the known—the genus—comes first, in accordance with the order of time, and only then does the new differentia specifica that follows bring forth the new entity, the new species. This is calm, coolly logical thinking.

What, then, of the languages of primal culture? According to the detailed studies I have conducted on this subject, the genitive precedes the noun everywhere, and this placement remains consistent even in the languages of patriarchal herders and patrilineal totemic hunters. The genitive only begins to follow the noun among matrilineal plant cultivators.

Thus, even in primal culture, the world of language is a significant

field. We will become even more convinced of this as we now examine some of its creations.

b. LITERARY CREATIONS OF PRIMITIVE TIMES

Some readers will likely shake their heads at this heading: surely it contains an exaggeration that goes beyond what is permissible and does more harm than good to the subject. I stand by this heading, however, and only regret that so little space is available to present the greater works of prehistoric culture, in which true art is also evident in the ability to present lengthy trains of thought in an orderly yet lively, compelling, and meaningful way.

Radcliffe-Brown has reported on his Andamanese Pygmies that there are respected men there, called "seers," who are tasked with retelling the ancient myths and legends time and again and who take pride in recounting them each time in a new, exciting, interesting, and pleasing way. Unfortunately, the researcher—entirely enamored with his new sociological theory—did not record a single example of these new creations.

STORY OF AFRICAN PYGMIES: LOVE IN THE JUNGLE

H. Trilles took a different—and better—approach with his West African Gabon Pygmies. He has recorded for us an entire collection of their proverbs, animal and other fables, and short stories. The bearers and narrators of this literature are a kind of bard who travel from camp to camp and perform their works in the evenings around the campfire. From among these, I have selected a story that deals with the love of a newlywed Pygmy woman, torn between her husband and his brother, who is also married. It ends, as is often the case with these performances, with a riddle that the listeners themselves must solve. Unfortunately, lack of space prevents me from reproducing the delightful wording of this tale, which is also interspersed with a number of lyrical interludes sung along by the audience.

First comes the passionate love of the newlyweds, which is also described in one of the lyrical interludes. The woman then prepares for her customary visit to her mother; the man sends her off with a fine piece of game and promises to fetch her back himself after some time. Before he can do so, he is bitten by a snake, leaving him unable to walk; he asks his brother to fetch his wife. The brother agrees only after being promised a gift; the ensuing lyrical interlude condemns this. The brother arrives at the wife's home; she expresses great sorrow and sets out on the return journey with him the next morning. As they walk through the jungle—as usual, the woman in front, the man with his weapon behind her—a panther leaps out in front of her. She freezes in terror, but the brother leaps forward, throws himself on the panther, and stabs it in the heart with his knife, causing it to fall dead. But as it falls, it rips open the man's entire shoulder. The woman washes the wound, applies medicinal herbs she knows, and bandages it. Then she says to the brother: "I love you; you saved me. I no longer love my husband; he has not given me a child, and he holds me in low esteem." The brother objects: "Your husband truly loves you; he

is my brother." After much back-and-forth, they agree on a test of her husband's love, which the brother had devised.

He lays the woman on the ground and places the panther's body precisely on top of her, "as if it were devouring her." "Now I will run home," says the brother, "and tell your husband, 'A panther has wounded me and is about to devour your wife.' We will then see what he does." He runs off, but not too quickly. Meanwhile, the story describes the shivers of the woman lying beneath the dead panther as she fears the night terrors and even more so the howling of the male panther searching for his mate. But upon reaching the camp, the brother hurriedly rushes into his brother's hut and delivers his terrifying message. The sick man, though not yet fully recovered, immediately jumps to his feet—without even taking a weapon—rushes into the forest, and, upon reaching the spot, throws himself without hesitation onto the panther, which now lay lifeless to one side. The woman jumps up, laughing joyfully, and explains that the panther was already dead. "But why did you do that?" "I wanted to see if you loved me." They then returned to the camp, and he gave her many children. — And now the prize question posed to the audience:

Ntio (the brother's name), who threw himself on the tiger with nothing but his knife, even though he could have run away—

Lütsi (the woman's name), who was left lying all alone beneath the tiger in the darkness of the night, even though she was just a woman—

Ki (the husband), who ran over unarmed to save his wife and threw himself on the tiger without a moment's hesitation—

Which of the three is truly the bravest?

P. Trilles, who shared this jungle novella with us, recounts that a heated debate ensued, the outcome of which he never learned, since he had fallen asleep long before it ended.

Is the problem addressed here not so universally human that, if one strips away the jungle setting, one can immediately transpose it to our own time? But the way in which the jungle novella addresses and resolves the problem truly does the Pygmies credit.

The poignant myth about the origin of fire also originates from the same Pygmy tribe (see above, p. 425).

MYTH OF THE WINTU INDIANS: THE FIRST WAR

The Wintu Indians of north-central California have a detailed myth about the outcome of the temptation that Sedit-Coyote, the representative of evil, Sedit-Coyote, exerts on two brothers sent by the Supreme Being, who were tasked with building a path to heaven for the humans who would come later—a path that humans, when they grow old, are to ascend in order to wash and bathe there, after which they return to life rejuvenated and never die. This narrative, however, carried out down to the smallest details and full of the finest psychological insight—in the tempter's cunning, in the wavering of one brother, and in the resolute refusal of the other—can only be reproduced in its entirety, and that would take up too much space here.

These same Native Americans have another myth about the first war on Earth, which, although very detailed, allows individual elements to be more easily extracted. This first war is a "Trojan War"; it is also waged because of a Helen—the beautiful Norwan, the "Southern Woman," who, carried away by a desire to dance, leaves her husband Norbis, the "Southern Man," and joins the marvelous dancing pair of the Red-Breasted Brothers, which is why the war then breaks out.

Norwan received her enchanting beauty from the Creator Olelbis—"He Who Is Above"—himself. Let us hear how he further endows her. He stretched out his hand toward the southeast and took from there the red-flowered Yosan plants, gave them to Norwan, and said: "Take them, and when you dance, use them as a staff. It will have a flower at its tip that will always bloom." He reached toward the southeast, took a little bird, plucked a feather from each wing, gave them to Norwan, and said to her, "Pin the two feathers in your hair, right above your forehead. They will begin to sing every morning, and you will then know when you must begin to dance." He stretched out his hand toward the southeast again and picked some reddish-blue little flowers ..., gave them to Norwan, and said, "Roll them in your hand, crush them, apply the juice to your face, and use it to rouge your cheeks." She also adorned herself with red Buso blossoms and white Hawe flowers. From starflowers, she made a wreath for her head and decorations for her shoes. Then she took the Yosan staff in her hand and set off for a grand dance festival, to which an invitation had arrived in the meantime.

On the way there, she meets a merry group of mouse girls and rabbit boys, who beg her to take them to the dance, but say they have nothing to wear. In the blink of an eye, she makes an elegant, coquettish rabbit and mouse costume for one boy and one girl, claps her hands, and calls out: "Let everyone be like this now!" And so she gains an original and merry entourage. As she enters the dance hall, all the guests already gathered there exclaim: "Look, here comes Norwan. How beautiful she is, oh how beautiful she is!"

How the dance festival unfolds, how Norwan—herself a brilliant dancer—succumbs to the enchanting charms of the Rotbrust brothers' dance duo and, half-unconsciously, joins them—all of which **is** captivatingly described in great detail—we must unfortunately skip over here.

Just as the first part masterfully showcases feminine beauty and artful dancing, the second part depicts, with no less artistry, the mighty war between men, which we can unfortunately only summarize in a few brief strokes.

The depiction of the back-and-forth battle—which has grown from an initial skirmish into a full-scale battle as reinforcements from all sides arrived during the night—is magnificent. With great literary artistry, the right and left wings and the center of the masses of fighters on both sides are distinguished and set against one another. And as now one wing advances, then the other, while the other retreats; as those retreating regroup and launch a counterattack; as the effects spill over from one wing to the other: all of this, interwoven with a multitude of one-on-one battles between outstanding heroes, is depicted with a broad, sweeping perspective, yet also with captivating power and passion, so that a kind of *Iliad* emerges here as well. This myth, however, reaches the pinnacle of narrative art in that, although all the heroes appearing here seem quite concrete and individual, the whole—this entire "First War"—seems to be nothing other than the grandiose struggle between the forces of nature in the warm South and those of the cold North. In any case, this struggle of the elements is drawn into the struggle of men, and the forces of nature are enlisted by both opposing powers as their strongest—and perhaps decisive—auxiliary forces.

And the end of this "First War"?

The great battle ended in a stalemate and had to be called off on both sides due to the extreme exhaustion of the combatants. Norbis, the leader of the Southern Army, **returned home without Norwan, his wife**; the Red-Breast Brothers, the leaders of the Northern Army, who had locked Norwan inside a house, found her gone upon their return—she had fled back to her home mountain. The myth itself, in which certain

it had also described the battle, states as the overall outcome of the entire war: “No one gained anything, and many were killed.” By this alone, it passes a condemnatory judgment on war.

She does so even more by also recounting the remorseful realization of the southern woman Norwan, because of whom the war had broken out in the first place. When she had been back home for a while, she said one day to her faithful companion, the bird-man Heniha: “My brother, I did wrong. When I think about it now, I see that I did wrong. Today I understand everything. I see that if I hadn’t danced with the Red-Breasted Man, if I hadn’t gone home with him, there would have been no fighting and no confusion in the world. If I had gone to the dance with Norbis (my husband), there would have been no battles, no killing. But I didn’t feel like going with Norbis. I don’t know why—but for some reason, I didn’t like him. I danced with Redbreast, sat with him, and went off with him before I knew what I was doing.”

The myth delivers its third judgment through the words of the old, wise grandmother of one of the warriors, who said to him: “My grandson, I did not know that you would go out to do the things you have done. When I raised you, when you were still a child, I told you how to hunt and fish—nothing more. I never even thought that you would fight and strike down strong men. But there is a woman in Norwan Mountain who has brought all this misery into the world. This battle began because of her, and now it will continue forever and everywhere; there will never again be an end to fighting in this world. This world in which we live would have been good if it weren’t for that woman. “Well, from this time on, all these trees, mountains, rocks, and all the people in this world will be evil and will harm others.”

MYTH OF THE YUALEAI AUSTRALIANS: THE LOSS AND RETURN OF THE FLOWERS

While, from a formal standpoint, the myth recounted earlier already reveals the high art of storytelling possessed by these earliest humans, its content also makes it clear that these people were not concerned solely with food, drink, and other material things, but that they also displayed an open appreciation—indeed, an enthusiastic admiration—for beauty, and did not hesitate to plunge into bloody battles for its sake.

A myth from southeastern Australia movingly demonstrates the same appreciation for beauty. It was recorded by an Australian settler’s wife, Mrs. Katthrine Langloh-Parker, who was born there, lived for many years in close contact with the indigenous people, and has published several valuable works about them. From one of these works, I have selected the following myth, which deals with the loss and recovery of beloved flowers.

This myth also features the supreme being of these tribes, Bayami, “the Creator” (or “the Great One”). The earliest detailed accounts of him come from the Australian settler John Manning. In his youth, while traveling through Europe in 1832, he also visited Goethe—shortly before the latter’s death—and was embarrassed by the fact that Goethe appeared to be better informed about the indigenous people than he himself was. This prompted him, upon his return to Australia, to conduct tireless research among the indigenous people regarding their customs and religion, which he then began to record in 1844 and 1845. He describes how this Creator, who initially lived among humans on Earth, now reigns in heaven alongside his consort on a crystal rock, around which magnificent columns rise, shimmering in every color. The deities are connected to humans through their two messengers and

messengers—the Sun Being and the Moon Being, the latter of whom is also the first human, the progenitor. These two report to them everything that happens on Earth and mediate communication between God and humankind. This mediation is also evident in the following myth. It originated with the Yualeai tribe, which belongs to the Wiradyuri-Kamilaroi group and is therefore no longer the oldest primordial culture, but still reflects its spirit well, even in its wording:

"When the Creator Bayami had left the earth to dwell in heaven—the distant land of peace, beyond the summit of the Ubi Mountains—all the flowers that grew on the plains and ridges of the earth and **on** the trees withered and perished. None bloomed in their place. The earth looked bare and desolate, for no flowers shone upon it anymore. That such flowers had ever existed became a legend that the elders of the tribe told the young. Just as the flowers had vanished, so too had the bees. In vain **did** the women **set** out with their little bark bowls to fill them with honey; they **always returned without it**.

Far and wide across the land, there were only three trees where the bees still lived and worked. But the people dared not touch these; for the Creator Bayami had placed a ban on them, declaring them his property forever. The children, however, cried out for honey, and the women grumbled because the priests would not let them touch the trees, which were consecrated to him by all, forever.

When the all-seeing messenger of God (the lunar progenitor) saw that the tribe, though **starving** for honey, did not touch Bayami's trees, he reported their obedience to the Creator. Bayami was pleased and said he would send them something that appeared on the Bibbil and Gullubah trees (a type of whole-leaved boxwood) especially during times of drought and would provide food **as** sweet to the children's taste as honey. Soon white specks of sugar could **be seen** on the leaves of the Bibbil, and then came the clear manna, which flowed down the trees like honey, piling up in clumps at the forks of the branches **or** sometimes falling to the ground, where the children gathered and ate it when **they** could not reach the branches. People's hearts were glad **as** they gratefully ate the sweet food that had been sent to them.

But the men of God longed deeply to see the earth covered with flowers again, as it had been before Bayami's departure. Their longing grew so strong that they decided to travel to him and ask him to make the earth beautiful once more. Without telling the other people where they were going, they hurried off to the northeast and traveled farther and farther until they reached the foot of the great Ubi-Ubi Mountains. But these mountains towered so high above them that their **peaks, vanishing** into the sky, disappeared from view. Its flanks of white rock appeared steep and insurmountable as they wandered around its base in search of a way up.

Finally, however, they spotted a footpath carved into the rock, then another and yet another, and looking up, they saw a path of carved steps stretching as far as the eye could see. They decided to climb up this stone staircase. Up they went, and when the first day's climb was over, the summit of the mountain still seemed high above them, and the same was true at the end of the second and third days; for the route was long and full of twists and turns. On the fourth day, however, they reached the summit.

There they saw a hollow in the rock from which a spring of fresh water bubbled up, where they could quench their thirst. And they found that it invigorated them so much that they lost all sense of the fatigue that had previously nearly brought them to their knees. A short distance from the spring, they saw circles of piled-up stones. They stepped into one of them, and almost immediately they heard the sound of a resonating stick, through which the voice of Wallagurunbuan, one of the lunar messengers of the gods, made itself heard. He asked the men of God what they desired there, where the

sacred customs of Bayami the Creator were proclaimed to those who came there in search of knowledge. They told him how sad the earth looked since Bayami had left it, how all the flowers had died, and how none would ever bloom there again. And even though Bayami had sent tree manna in place of the long-missed honey, they still longed for the flowers to make the earth just as colorful and cheerful as it had once been.

So Wallagurunbuan commanded some of the serving spirits of the sacred mountain to carry the men of God up to heaven, where unfading flowers never cease to bloom; from there, the men of God could gather as many as they could hold in their hands. Then the spirits would carry them back to the sacred circle at the summit of the Ubi-Ubi Mountains, and from there they would have to return to their tribes as quickly as possible.

As soon as the voice fell silent, the men of God were carried up through an opening into the heavens and set down in a land of great beauty. Flowers bloomed everywhere in such abundance as they had never seen before, clustered in rows of brilliant colors, looking like hundreds of rainbows spread out across the grass. The men of God were so overwhelmed by this sight that for a few moments they could do nothing but weep; their tears were tears of joy. But soon they remembered why they had come, and they bent down and quickly gathered handfuls of the most varied flowers. The spirits then carried them back to the stone circle at the summit of Ubi-Ubi.

There, the voice of the Whistling Wood sounded again, and Wallagurunbuan said: “Tell your tribes that when you bring them these flowers, the earth will never again be without them. Throughout all the seasons, a few of the flowers will be brought by the various winds; but the east wind will bring them in abundance: flowers on every tree and shrub, flowers to sway amid the grass on plains and mountain ridges, as thick as the hairs on an opossum’s fur. But the east wind will not always bring them so thickly, only at times; yet never shall the earth be entirely devoid of flowers again. When there are only a few of them, and the sweet-scented wind does not blow to bring first the rain showers and then the flowers, and the bees can barely make enough honey for themselves, then manna will again drip from the trees in place of honey. Until then, when the east wind blows the rain down from the mountain and opens the flowers for the bees: then there will be honey for all. But now, hurry and bring this promise and the unfading flowers, which are the testimony to it, to your people.’

When the voice fell silent, the men of God returned to their tribe, bringing with them the flowers from the Bullima sky. They descended the stone staircase—carved by the spirits for the coming of the Creator Bayami—and hurried across the plains and mountain ridges back to their tribe’s camp. Their people crowded around them, gazing with wide-eyed wonder at the flowers the men of God had brought back. Still fresh, as if they had just left heaven, the flowers filled the air with a sweet fragrance. When the tribes had gazed at the flowers long enough and then heard of the promise made to them by Bayami through his messenger Wällagurunbuan, the men of God scattered the heavenly flowers far and wide in all directions. Some fell onto the tops of trees, others onto the plains and hills, and wherever they fell, their kind has grown there ever since.

The name of the spot where the priests first displayed the flowers and scattered them is still called Girrowin, “Flower Place.” After the Bayami bees had caused the east wind to blow rain down from Mount Ubi-Ubi to thaw the frost-bound ground, green grasses sprouted there, framing fragrant, gleaming flowers of many different shades. And the trees and

shrubs bloomed densely once more, and the earth was covered with cool grass and flowers, as if the Creator Bayami were walking among them."

CONCLUSION AND SUMMARY

We could present documents of this kind—such as those we have compiled here—from many other peoples of the primordial culture, which would enable us to judge the state of these peoples' spiritual life, their thinking, feeling, and aspirations, and their ability to express the stirrings of their inner life to others and to pass them on; but there is not enough space here for that.

Even the documents we have presented allow us to see how clear their thinking is, how they shape it into sound judgments, how they can link these judgments to comprehend and present entire sequences of facts and draw conclusions from them, and how they are also capable of organizing large bodies of thought in a clear manner, presenting them in an orderly sequence, and not losing the thread even in more confusing and complicated sequences of events. We see how they are able to appropriately shape and present extensive myths and narratives, and, despite the manifold appeal of variety, never lose sight of the underlying unifying theme.

We have also seen how, in these creations of theirs, these people deal with the ordinary events of family and tribal life with love and understanding, while also venturing to address the highest and deepest problems of humanity; how they bring to this endeavor both the necessary maturity of mind and the passion of the heart, and struggle with spiritual strength to resolve these obscure questions. It has also been a surprise to see the loving understanding these peoples show toward the beauties of nature, how they attribute to the Creator Himself the joyful admiration of the beautiful world He has created, and how passionately they love flowers, so much so that for many of them, heaven is either called "the Land of Flowers" or is particularly emphasized by the abundance and splendor of the flowers that reign there.

c. VISUAL AND MUSICAL ARTS IN PRIMITIVE CULTURE

This heading is even more "provocative" than that of the previous section, and I must truly hurry to explain what is meant by it.

THE VISUAL ARTS

As far as the visual arts are concerned, there are in fact not the slightest external creations of this kind that would have been produced by any people of the primordial culture. The extent of what they apply as so-called ornamentation to their weapons and tools is, among a whole series of them, zero, or is at least so meager and haphazard that one cannot even speak of a "style" or "motifs" of a style. Not even their own bodies are adorned. So to speak, any form of body adornment is absent among the African and Asian Pygmies; among the latter, the Semang Pygmies constitute a remarkable exception, for they adorn themselves with flowers. The scar tattoos of the Andaman Pygmies and the Southeast Australians are not adornments but have some sort of sociological significance. The often magnificent feather ornaments of the Maidu, Wintu, and Eastern Pomo Indians are not individual adornments for each person, but are reserved for high mythological figures, especially the Creator's herald—the Creator himself is never depicted—and the two tribal ancestors. However, they are never worn outside of mythological-religious ceremonies. The body paintings of the Yamana and Halakwulup peoples of Tierra del Fuego are said to represent spirits and have mostly been adopted from the coming-of-age ceremony (Kina) of the tall Selknam people.

If all this is the case, how can one seriously speak of a "visual art" in primitive culture?

Among these peoples, who are so closely connected to nature because they live entirely from and through it, one ability has reached the highest level of development: the keen observation of life in nature. This ability is more highly developed in men than in women, who are more familiar with the quieter life of plants. Men, on the other hand, are drawn to animals—with their often swift, far-reaching movements, the variety of their vocalizations, their size, and their weapons of attack, as well as the thrilling excitement and the potential for injury or even death inherent in hunting them. Added to this is the second aspect of these people's talent: their ability to deceptively portray the distinctive characteristics of these various animals—not outwardly through drawing, painting, or sculpture, as the later, more advanced hunting culture would do [cf. F. Eppel, p. 356 ff., K. J. Narr, p. 518], but with their own bodies in the animal dances they perform. It is a visual art because it shapes one's own body; it is an art because all movements are performed to the steady rhythm of the dance. There is unanimous agreement on this

testimony of all observers, on the one hand, to the lifelike realism and, on the other, to the artistic character of these animal dances. The Pygmies, these passionate hunters, are particularly distinguished in this regard, and among them, the African Pygmies in particular. But similar accounts are also reported from the Tierra del Fuego Indians and the southeastern Australians. Among the Maidu Indians of north-central California, the dances—which depict the most important game animals, such as deer and rabbits, and in which the dancers also wear individual parts of these animals (ears, tails, etc.) on their own bodies—took on the character of ritual ceremonies intended to ensure a successful hunt for these animals. In these animal dances—in which humans are occasionally depicted as well, for example as hunters—we are dealing with the beginnings of the *dramatic arts*. These are modest beginnings, but with a setting that could not be more magnificent: the liana-draped giant trees of the African jungle, the strange tree forms of the Australian parkland, and other backdrops of this kind, illuminated by the pale glow of the moon or the campfire's nightlight, devoted performers, and engaged listeners and spectators who are not stingy with their applause and use it to single out the outstanding performers in particular.

The dramatic art unfolds among both the African Ituri and Gabon Pygmies, but also in the recitation of stories, myths, and legends by the traveling bards found among them. These bards do not narrate in a dry or detached manner; rather, they pour their whole souls into their performance, immersing themselves in the changing situations and portraying them not only with words but with their entire bodies—through the play of their eyes, facial expressions, and a variety of arm and leg gestures. By interspersing the narrative with short songs, whose refrains the listeners sing along to, they introduce a lyrical element on the one hand, while on the other hand they also draw the listeners into the drama. The result is thus a total work of art consisting of dramatized epic poetry with lyrical interludes. The novella "Love in the Jungle" is a work of this kind (see above, p. 443).

In the myth "The First War," however, we have also seen how the aesthetic pleasure of dance as such captivates these people of primitive culture. Their admiration for beautiful women and men, their graceful gliding and weaving in dance, the elegance of the hand movements with which they perform all manner of charming embellishments of the space while dancing: these people are so receptive to such charms that they surrender to them as if in a frenzy, so that a woman forgets her husband and runs off with a stranger, half unconsciously, half consciously;

All of this shows the perfection and passion with which these dances must have been performed (see above, p. 444).

THE ART OF SOUND

The art of sound—music—began with the human voice, not with any musical instruments. Throughout the tens of thousands of years of primitive culture, no melodic instruments had yet been developed—neither wind nor string instruments—but only rhythmic instruments, and even these were of the most primitive kind. The skin drum is absent; during the coming-of-age ceremony of the southeastern Australians, the women, crouching on the ground, stretch skins over their thighs and, by striking these skins, mark the rhythm. The Andamanese Pygmies mark the rhythm in their dances by stamping their feet on a concave piece of wood lying on the ground. Among the North-Central California Indians, fruits with hard shells and movable kernels inside are used for the same purpose as rattles; several of these are shaken by hand or tied to the instep. The simplest method is to use the human body itself by clapping the hands together or against the thighs.

How and when, then, did the human voice transition from speech to singing? Earlier linguists, such as Wilhelm von Humboldt and Herbert Spencer, and more recently the Danish phonetician Jespersen, answer this question as follows: “The development did not proceed from language to singing, but rather in the opposite direction, from singing to speech”; the oldest language was, in fact, song, and major language families, such as the Tibeto-Chinese, Sudanic, and Bantu languages, are still tonal languages today. In contrast, it must be noted that the oldest languages are not tonal languages and that we have observed the tonal languages existing today emerging from earlier stages in which they were not yet tonal languages. In his **Psychology of the Peoples**, W. Wundt also pointed out that these theories completely neglect the essential difference between the fluctuating, immeasurable pitch intervals of modulated speech and the definite intervals of song, and that passionate excitement only intensifies this fluctuation, and thus cannot in any way serve as a transition to song. However, he did not explore this insightful idea further because he attributed too much importance to rhythm in the origin of singing.

I have sought to remedy this shortcoming by pointing out that during ordinary, dispassionate speech, the vocal cords are under relatively low tension, so that the

The normal tone of speech—even in high soprano and tenor voices—is surprisingly low. Precisely because of this low tension, even the slightest emotion or act of will causes the voice to rise, though this occurs through gliding modulations. When singing, on the other hand, the vocal cords are tighter and, for that reason alone, under greater tension, and the differences in pitch are produced not smoothly but abruptly, so that one can easily perceive the interval of a tone step in terms of quality and quantity, even if one cannot always determine it precisely. When, then, does this greater tension of the vocal cords occur during speech in everyday life? First, when one must speak over long distances, such as when calling out; second, when interest in the sounds of the call is not one of excited passion but has been tempered and rendered somewhat indifferent by long habit—as with frequently called signals, the calls of salespeople, and the like—where lingering on a single note also becomes more common; third, when a number of people speak the same words in a moderate, dispassionate manner, where consideration for the others speaking also causes an equalization in the pitch and duration of the sounds. The accompanying texts to their dances already provide such an opportunity among the most ancient peoples.

Traditional evolutionary theory would now also assume that development here would take place in small and minute steps, for example: first, the prolonged holding of a single tone—monotony—then steps up or down by a half-tone or whole tone, followed by steps of two, three, four, and five tones, thus through the octave and finally beyond it and down below it. However, it is precisely in the field of comparative musicology that cultural-historical research has taken hold with such strength and scope that it now almost completely dominates the field. This was already initiated by K. Stumpf, but was consciously carried out in all directions by his student E. M. von Hornbostel and others.

The work of these cultural-historical researchers extends to all cultural spheres, including later ones, right up to the advanced civilizations. What findings have they specifically uncovered regarding the peoples of the primitive cultures?

They have indeed identified a group of tribes within primitive culture in which a monophonic system prevails, with melodies always consisting of two to three tones, although, of course, there is still no question of a “scale” (tonal system). This group is found among the tribes of the Arctic-American cultural sphere, as well as the two Tierra del Fuego tribes, the Yamana and Halakwulup, and the oldest (caribou) Eskimos. Following them is a group with a moderately wide range of pitch variation—

melos, which can comprise up to six tones; this includes, in South America, the Pampas Indians, the Chaco and Ges tribes; in North America, the Yuma, the Southern and North Central Californians, several Selish and Eskimo tribes; and in North Asia, the Samoyeds and Finnish tribes. Quite distinct from these groups and by no means derived from them is a group characterized by fanfare-like melodies and singing in triadic intervals, in which a scale emerges more clearly. This group includes the African Pygmies and Pygmoids, the Bergdama, and the Bushmen, while among the Asian Pygmies, the Philippine Negritos and a portion of the Semang Pygmies belong to the same group, whereas the Andamanese Pygmies and another portion of the Semang are classified with the monophonic group.

Surprisingly, among two Semang Pygmy tribes, the Jahai and the Kenta, and among the neighboring Pygmoid Sakei, the beginnings of polyphony also appear —specifically, in the form of a true canon, where a theme begun by one voice is immediately taken up by another voice in the (higher) octave after a few notes and continued exactly, leading M. Schneider to state: "The Pygmies of Malacca possess a strict and tonal canon technique." Through another method—that of the drone—these Pygmies achieve a primitive form of polyphony, namely by having a melody move over a sustained single note. Philippine Negritos follow a third approach. Here in northeastern Luzon, M. Vanoverbergh witnessed a nightly prayer ceremony in which a number of prayer stanzas, interrupted by occasional pauses, were sung throughout the night.

In conclusion, I cite here Vanoverbergh's description of this nocturnal prayer chant, because it conveys the profound impression that this simple music, in conjunction with the entire atmosphere in which it resounded, made on these people of prehistoric times:

"One of the men intoned the first three or four syllables of the first verse with a good number of modulations, and then the rest of the men joined him in chorus. Afterward, one of the women intoned a verse in the same manner, and the rest of the women followed her in chorus. As soon as the lead singer rose from his seated position, he crossed his arms over his chest, and the men following him did the same; likewise, the lead singer and the women following her did the same. As the singing continued, they began to walk slowly and solemnly in a circle, stepping back again when the last ones reached the starting point of the circle. Thus, in the alternating chorus, sometimes the men sang alone, sometimes the women; later on, the men's choir and the women's choir sang together, but in such a way that each sang its own text to the respective melody. Very often, the women began their part while the men had only just reached the middle of theirs.

"The melody was solemn and very musical; at first I almost thought they were beginning the Kyrie of the Missa de Angelis. Even when men and women sang together, or when the women joined in the middle of the men's singing, the overall effect was harmonious and in no way discordant. Roughly the first half of each verse, including the inflections, was sung slowly and solemnly, with several modulations; the rest was then sung very quickly, somewhat lower in pitch, much less loudly, and without modulation.

"The tone, the emotional tone of the singing, and the gestures created such a

impression on me that I myself was overcome with awe and reverence. There could be no doubt that the natives, too, deeply felt within themselves a connection to the supernatural world. No one could be present at such a ceremony, in the darkness of the night, hearing these solemn songs and seeing the distinctly reverent demeanor of the participants, without concluding that they were treading on sacred ground."

Since that time (1924), thanks to Garvan's research (see below, p. 496), such solemn ceremonies have also become known among other Pygmy tribes of Luzon and Mindanao.

4. CUSTOMS AND MORALITY IN PRIMITIVE CULTURE

a. THE CORRECT POINT OF DEPARTURE

Progressive evolutionism sought to portray the beginnings of humanity as as low as possible in order to be able to demonstrate all the more brilliantly the glorious upward development of humanity in all areas of life from that point onward. It all actually began with chaos or nothingness; thus, in the realm of human society, with the absolute lawlessness of sexual relations; and this applies especially to the realm of customs and morality. It was claimed that the beginning was a state of complete moral depravity, and gruesome evidence of this was then cited from all sides, drawn from the most diverse peoples of the earth. The sheer volume of this evidence seemed overwhelming; yet there had been no prior methodical investigation into the ethnological age of the individual peoples from whom this evidence originated—whether they were indeed peoples of the highest or at least high ethnological age, or peoples of medium, younger, or youngest age—in which case the evidence naturally had no probative value regarding the origins of humanity. A careful critical examination of this evidence has in fact shown that almost all of it dates from the Middle and Recent periods and thus cannot serve as support for the progressive theory of evolution. The numerous recent expeditions and studies that have since been undertaken, particularly among the ethnologically oldest peoples, have brought about the collapse of evolutionism in this field as well.

b. THE MORALITY OF RELIGION

If we now look at our peoples of primordial culture, we can immediately discern a moral dimension to religion. So many later peoples, who are more advanced in external culture, no longer concern themselves with the supreme deity, their Creator, on the base grounds that He is good anyway and does good, and that one can therefore expect nothing evil from Him

to fear from him. Other peoples at this stage are so incapable of any higher spiritual ascent that they say: "God is so far removed from us that He no longer cares about us; therefore, we need not care about Him either." Not so the peoples of the primordial culture. They believe that in primeval times God dwelt intimately with them on earth; but even though He has now, in many cases through the fault of humankind, departed from them to heaven, they believe that He still thinks of them, cares for them, and helps them. They therefore consider it their moral duty not only to place their trust in Him but also—as we shall see later (below, p. 489 ff.)—to express their gratitude to the Creator through prayer, sacrifice, and solemn ceremonies.

A series of examples from Africa illustrates where noble sentiment and where selfishness manifest themselves in ascending or descending forms. When the Gabon Pygmies find a beehive filled with honey in a tree—often after being lured there by a cuckoo-like bird—one of them climbs the tree and carefully lowers the honeycombs; but neither he nor the others eat any of it until he has climbed down again. Then, first, a honeycomb is carefully cleaned and thrown into the forest as a Pritia offering to the Supreme Being, accompanied by a beautiful prayer; another piece is set aside for the bird; only then do they begin to eat themselves. The younger Bushmen no longer practice the Pritia offering here, but they do leave the bird its share. The Fang people, who are technically and economically superior to both the Pygmies and the Bushmen, neither perform the Pritia offering to the Supreme Being nor set aside a piece for the bird; instead, they immediately begin to devour with their mouths full whatever they can get their hands on. In which of these three cases is there refined and gentle subtlety, inner discipline, and dignity?

But the morality of religion among these peoples is also evident in the fact that this religion is thoroughly morally oriented, and thus the closest connection between religion and morality exists. In the vast majority of these religions, the Supreme Being is the source of morality; He has established its laws, and they are handed down in His name, especially to the youth during solemn coming-of-age ceremonies. Since this Supreme Being Himself is morally irreproachable and positively virtuous, the inner greatness and purity of these moral laws are thereby assured. Furthermore, since this Supreme Being, with His omniscience, watches over the observance of these laws, punishes their transgression in this life through illness, misfortune, and death, and in the hereafter through a sad fate, but rewards their observance in both this life and the hereafter, then

there are thus also strong incentives for the realization of this morality, and in fact, as we shall yet see, to a remarkable extent it is no longer mere theory but living reality.

Thus, no moral indifference has crept into religion here, nor has there been a complete separation of morality from religion—and with it a dangerous weakening and clouding of the latter—as has occurred among so many later peoples. Even less have vices and crimes—which are served precisely by the commission of vices and crimes—been elevated here to the thrones and altars of the gods. Nor are illnesses regarded here as possession by evil spirits that must be driven out by all manner of fantastical incantations; rather, a multitude of natural remedies for illnesses and injuries are known. Even less common here is the grotesque convulsive shamanism, in which a spirit enters the shaman himself, speaks through him, and prescribes fantastical remedies. One searches in vain for such things in the accounts of the peoples of primitive culture.

c. FAMILY MORALITY

In nearly all of these peoples' creation myths, whenever the creation of humankind is specifically recounted, monogamous marriage and the family are also attributed to the Creator's own institution. He always creates only one human couple— *a* man and *a* woman—and thus parental authority is also supported by the Creator's authority. Here, the parents alone have real authority; not the chiefs, nor any other figures. They command great respect among their children, even though almost everywhere they do not use corporal punishment as a means of discipline. This respect is also extended to a great extent to grandparents and older people in general. If they are unable to work due to their age, younger members of the tribe voluntarily bring them food, and they usually receive the larger and better portion. Nowhere here does old age, which has become incapacitated, meet with contempt or ridicule, as it does in later, totemic tribes that practice the cult of brute and supple strength; and it would be utterly inconceivable that older people, unable to work, would be killed, as often happens among the later matrilineal tribes. On the contrary, there are cases among the Southeast Australians where old, frail, and sick people are carried along for years on arduous journeys, and where their death—which might have seemed a relief to them and to others—for example, among the Firelanders,

could give rise to painful lamentations for the dead and even bitter accusations against the Supreme Being.

As we have seen (see above, p. 393), in the formation of the family among almost all these peoples, there is freedom of choice in selecting a life partner not only for the young man but also for the young woman—a freedom that is usually lost entirely for the young woman, and often enough for the young man as well, at later stages of cultural development. Women are neither abducted nor purchased, but courted. As a result of this freedom of choice, in which genuine romantic affection also comes into play, marriages are more enduring. There are tribes at this stage in which marriage is in fact indissoluble, especially when children are involved. Adultery is almost unknown in some of these tribes and is everywhere significantly rarer than among later, outwardly more advanced peoples. It is not glorified anywhere, but is universally regarded as a serious crime and is usually punished very severely, often with death—including adultery committed by the husband, which would be almost unthinkable at later stages. Men and women are largely equal; this is also evident in the fact that both eat their meals together with the children. Monogamy is by far the predominant practice among all these tribes; among a number of tribes in this primitive culture, it is the only permitted form of marriage. Where polygamy is found, it is often caused by the levirate custom—the obligation to marry the widow of a deceased brother—or by the infertility of the first wife (see above, p. 393 ff.).

d. SEXUAL MORALITY

We have already touched upon some aspects of sexual morality in our discussion of family life; we must now examine them in somewhat greater detail. Even among these most ancient peoples, we find a number of them who strictly require that girls remain virgins before marriage, often invoking the will of the Creator. Where greater freedom prevails in this regard, it is almost a form of courtship, as can be seen from the fact that as soon as a girl becomes pregnant, the young man in question is expected to marry her, so that no child may be born outside the protection of marriage. Illegitimate children are regarded there as a disgrace that falls particularly on the mother and often results in banishment and other punishments.

Complete nudity does not occur among any of these peoples: among the vast majority, men and women—and certainly the latter—wear clothing, not out of a desire for adornment, but out of a sense of modesty. Nowhere—

do men and women bathe together. P. Schebesta, who lived day and night with the Semang Pygmies for months on end, testified that he had never witnessed an indecent scene. Once he heard a young man—who had otherwise also displayed morally reprehensible behavior—utter lewd words; but an elder immediately intervened with the indignant words: "Lawaid Karei." This was a sin against Karei, the Supreme Being, and the young man fell silent immediately. Among them, it is also considered a sin to watch dogs mating, for married couples to have sexual intercourse during the day, or for parents to cuddle with children of the opposite sex while sleeping; several of these sins must be atoned for by offering one's own blood to the Supreme Being. P. Trilles reports from his Gabon Pygmies that when a boy experienced his first nocturnal emission in a dream, he was required to inform his father. The father would then wash him on the riverbank and admonish him never to engage in masturbation, which, incidentally, is always considered despicable. He points out to him the women he must not touch: his mother, his aunts, his sisters, and his half-sisters. Similarly, the daughter is instructed by her mother at the time of puberty and taken into the forest for a certain period, where she is subject to prohibitions analogous to those imposed on the boy. Men are never allowed to see menstrual blood. Among the Ituri Pygmies, just as among the Gabon Pygmies, the father also gives the boy similar warnings upon his first wet dream. Among the Southeast Australians and North Central Californians as well, during the rites of passage for boys, the candidates are sternly warned to guard against sexual transgressions and not to chase after girls at all.

Collective debauchery is entirely unknown among these tribes, whereas in later cultures it is often practiced as an official tribal custom during boy or girl initiation rites, as a fertility ceremony, or in other ritual acts—or even out of pure sensuality.

e. THE MORALITY OF PROPERTY

The property system of these indigenous peoples stands at a truly remarkable moral level. It exhibits a logical structure, dividing property into two major groups: movable and immovable property, each of which in turn comprises subcategories—movable property being further divided into ownership of means of protection and production and ownership of foodstuffs, while immovable property is divided into ownership of land and ownership of individual objects on the land.

MOVABLE PROPERTY IN THE FORM OF MEANS OF PROTECTION, MEANS OF PRODUCTION, AND FOODSTUFFS

1. The nature of ownership of means of protection and means of production is most pronounced; means of protection include clothing and shelter, while means of production include tools and weapons. Because and to the extent that they are produced through individual labor, they are also individual personal property, and this form of ownership reached a level of principle among primitive peoples that was never matched later: for here *all* people are holders of this personal property—not only men, but also women, including married women; and not only adults, but also children—and this right of children is strictly respected by adults, as is that of women by men. Just as the holder of this property has free disposal over it, so too are the objects of his or her property left untouched by others. All researchers agree in recognizing the honesty and reliability of these people, the rarity or complete absence of theft, and the severe punishment meted out in the exceptional cases where it does occur.

Furthermore, it is noteworthy that the stability of this property does not serve selfishness, but rather the ability to give and to transfer one's own property to others. Various gift-giving rituals are practiced especially during visits, and there are peoples, such as the Andamanese, among whom these objects of property pass from one owner to another through constant gift-giving, or, like the Yamana of the Firelands, who seem to possess objects of property solely to turn them into gifts. Borrowed items are also returned most willingly. If the borrowed item has met an immediate need or alleviated a hardship, not even the smallest compensation is demanded anywhere. However, if the borrower has made a profit—for example, while hunting with another person's weapon or dog—he must always share it with the owner, rarely for less than half of the profit. Among the Selknam, among whom lending is also rare, the borrower must provide compensation in the event of loss or damage to the item. Among the reindeer-herding Eskimos, this is not required if the item is destroyed through normal use; however, compensation is provided voluntarily if the owner is poor.

2. Ownership of food, even though acquired through hunting or gathering, is nevertheless regarded to the highest degree as property bestowed by the Creator, to the use of which He has attached various conditions. This is self-evident, since at this stage of gathering, humans merely enjoy what nature provides of its own accord according to God's creation—

. In order to appropriate it, humans must kill animals and also deprive plants of the life that God, the Lord of life and death, has given them, so that humans may sustain their own lives and obtain food for themselves. The Creator has entrusted this dominion to humans, but only under two conditions and limitations. First, humans must not treat these food resources arbitrarily or with reckless waste, but must use them with care and respect, only to the extent that their needs require. The second condition is that he must generously share this food with those who cannot yet obtain it through their own labor—children—or those who can no longer do so—elderly parents and the elderly in general—or those who are temporarily unable to do so—the sick and the needy of all kinds. The latter also include large families, where the parents alone cannot provide enough food for all their children.

This mutual sharing of food is now practiced by these primitive peoples—and all the more so the greater their ethnological age—to the widest extent and with the greatest willingness. However, the fact that this practice is motivated not only by acute need but also by the joy of giving is evident, for example, among the Semang: even when families have brought home exactly the same produce after gathering plants or hunting, they still exchange it as gifts after preparing it.

IMMOVABLE PROPERTY IN LAND

1. Among these indigenous peoples, the holder of immovable property in land is never the individual, nor the nuclear family, but rather the loosely organized extended family, which may also be called a clan. We can be brief here, since we have already said what is necessary on this subject earlier (above, p. 405). Waging war against other extended families in order to appropriate their territory would be something unheard of, simply incomprehensible, among these peoples; ownership of land is usually traced back to the tribal ancestor, who distributed the earth among humankind on behalf of the Creator, the first and supreme owner.
2. Among almost all these peoples, a special form of immovable property consists of certain trees whose fruit, sap, or wood is of particular value; certain spots on the ground where especially valuable plants grow or materials for tools can be found; honeybee hives; and natural fish holes and fish weirs.

These are always the property of the individual family that first discovered and occupied these places, and are also inherited by that family. But almost everywhere, these are not objects essential to life, but only those that represent a certain added benefit.

Thus, the order of "meum et tuum"—which St. John Chrysostom so rightly calls the "frigidum illud verbum" for later and higher stages of culture—is, among these most ancient peoples, shaped entirely in accordance with their economic level, yet it retains so much love and warmth, uniting more than it divides, that it knows nothing of the terrible excesses of disorder, confusion, greed, and strife that this order suffered at later stages—excesses that led entire peoples and cultures to the brink of the abyss and even plunged them completely into it.

f. OVERALL PICTURE OF MORALITY AMONG THE MOST ANCIENT PEOPLES

If we now take a look at the picture of morality among the most ancient peoples that I have sketched here, I have certainly been unable—given the broad, schematic outlines I was compelled to adopt due to brevity—to mention many irregularities and exceptions that prevent us from speaking of an ideal picture here; but for the same reason, I have also been unable to highlight certain specific traits that in many cases go beyond the general picture and thus reveal the heights to which even this ancient ethic is capable of rising. Certainly, these earliest humans are no angels and have their faults and shortcomings, the most significant of which is the volatility and inconsistency of their intense emotions, as a result of which they are often carried away into rash, impulsive transgressions even of those moral norms they recognize as such—in some cases, as we know, even to open rebellion against the supreme Lawgiver himself. But we also know of cases where, upon calm reflection—which then sets in—remorse and shame acknowledge the error as such; one disapproves of it and thereby provides moral satisfaction. Much of what we have heard is merely doctrine and ideal and not yet a universal reality, although it is certainly true that the value of a person and a people is largely determined by the ideals they set for themselves.

But even with all these caveats and reservations, this morality is still far from being the low starting point—or even the complete absence of morality—that progressive evolutionism required,

in order to speak of the glorious progress of its ascending human development. The close connection, however, between religion and morality among these most ancient peoples reveals how strongly and extensively these peoples are able to extend the influence of their religion into the realm of custom.

It is not unlikely that an objection will be raised against our account of the morality of these peoples, namely, that all of this is, after all, more of an unconscious morality, passed down from one generation to the next outwardly and without much reflection, without it truly becoming the spiritual possession of the individual. It cannot be denied that, here as well, customs and traditions have contributed greatly to the preservation of morality, but there can also be customs and traditions that run counter to it and hinder or complicate its realization; and the very fact that there are so few of these among these oldest peoples also testifies to the conscious and deliberate nature of their morality.

But that objection is refuted even more by the fact that the very transmission of morality from one generation to the next does not take place in a mechanical, lifeless manner, but through conscious teaching and upbringing, in which the rules and laws of this morality—clearly and concretely formulated—are presented as ideals to be followed and supported by various motivations. This occurs not only in the daily, individual upbringing that parents and grandparents provide for their children and grandchildren, but also in the solemn, collective coming-of-age ceremony—which, among some peoples, is divided into separate ceremonies for boys and girls—where, so to speak, the finishing touches are applied to this moral education and its final culmination is achieved. It is precisely in this respect that the coming-of-age ceremonies of these most ancient peoples differ from those of many later ones: alongside religious and social instruction, ethical instruction also occupies a prominent place in them (see below, p. 497 ff.).

g. MORAL INSTRUCTION IN THE YOUTH INITIATION CEREMONY OF THE YAMANA FIRELANDERS

Among the Yamana, as well as among the Halakwulup Firelanders, a joint coming-of-age ceremony takes place for both boys and girls, in which moral instruction, alongside religious and social instruction, occupies a prominent place. We are very well informed about this through the reports of P. Gusinde and P. Koppers, the former of whom participated in the coming-of-age ceremony (Çiexaus) twice, and the latter once, and were thereby accepted into the Yamana tribe. We learn about this in P. Koppers' report:

"The theoretical instruction associated with Ciexaus is occasionally imparted to individual candidates by their godfather or by other elders. From time to time, however, all candidates—both male and female—must sit at the feet of the officially appointed, elderly master to listen attentively to his teachings and admonitions. The instruction focuses particularly on the following points.

First, they are to adopt a spirit of altruism in their thoughts and actions. In these, as in all other teachings, the discussion is not abstract or theoretical; rather, specific individual cases are cited, and they are told how they should conduct themselves in such situations. For example, it says: "When you eventually have a hut of your own, and a stranger comes to you and takes some of the food that is currently cooking over the fire, you must not be angry about it, but rather welcome it and be glad; for it is, after all, an honor for you when a stranger shares a meal with you." Similarly, they are taught that when they wish to give gifts on occasion, they should offer good items rather than inferior ones.

Respect for the elderly is the second fundamental principle of Yagan upbringing: "When you speak with older people, you must listen attentively, even if you find it boring; for you, too, will grow old one day, and then you certainly would not want young people to shun your company." Day after day, we had ample opportunity to observe how this very sense of reverence for old age is deeply ingrained in people who were raised in the good old-fashioned way.

Boys, in particular, are also admonished to be peaceable and not to hold grudges. They are to be willing to help the blind and children. They are to treat women well so that they are held in high regard by others.

The girls are repeatedly reminded to be ready early in the morning. They should not be late risers. They should provide for themselves when it comes to water and firewood; once married, they should faithfully serve their husband and family. They should not shout over every little thing. They should remain faithful to their husband. They should not keep repeating what they have heard from others; otherwise, they will easily cause quarrels and discord.

All these rules appear to be sanctioned by religion. On the one hand, there are threats from the evil Yetaita; on the other, reference is made to the Supreme Being, Watauinewa: "Yetaita will come for you or cause you harm if you are not obedient. Watauinewa desires faithful adherence to all the rules. If you do not follow them, that is your own business. We cannot force you. But Watauinewa always sees you; he sees even when you secretly violate the Ciexaus rules. He will punish the transgression with an early death. And perhaps, as punishment, he will also let your children die."

It was by no means lost on us that, even among the Yagan, practice does not always align with these fine theories, nor that there are varying degrees of religiosity and moral integrity. And it was truly uplifting to observe that a large number of older and younger people of both sexes were sincerely striving to bring their lives and actions into harmony with the Ciexaus' moral code."

h. MORALITY AND MORAL CODES AMONG THE SELISH INDIANS

MORAL CODES OF THE THOMPSON R. INDIANS

The Thompson River Indians, who form the northwesternmost branch of the Selish Indian group, are already under the strong influence of matrilineal tribes among whom belief in the Supreme Being has almost entirely disappeared. However, among the Thompson River Indians themselves, this belief is still quite alive, and at least

The nature of their morality bears witness to this, even if the motivation does not appear to be religious. Yet they do acknowledge that their morality depends on the Supreme Being, who watches over them in this life as well as in the afterlife, punishes transgressions, and rewards obedience.

Noteworthy is the great freedom enjoyed by both sexes in the choice of a spouse that prevails among this tribe. Even if the young man courted the girl himself or through representatives among her relatives, she had to give her consent. However, the courtship could also be initiated by the girl's family. Another form of marriage involved the man touching the girl. Even if he touched her only by accident, he was compelled to marry her. A man who touched a girl's bare breasts or her heel thereby made her his wife, and neither party could back out. Official opportunities for such contact were provided during the religious dances in the spring. The girls themselves could also make a young man their husband by touching his head or arm. A man who was already married, however, was not obliged to accept her, even though polygamy was otherwise not uncommon. A girl thus spurned would sometimes commit suicide.

James Teit, their outstanding researcher and expert, paints the following picture of the remaining moral views of the Thompson River Indians:

"It is wrong to steal; people will despise you and say you are poor. It is wrong to be immoral; you will shame your friends, and you and your friends will be laughed at and become the subject of gossip. It is wrong to lie; people will laugh at you and, when you speak, pay no attention to you; no one will believe what you say. They will call you a liar. It is wrong to be lazy; you will always be poor, and no woman will take care of you. It is wrong to be unhospitable or stingy; people will also be stingy toward you, avoid you, and not visit you; they will talk about you and call you a "miser," and you will be poor. It is wrong to be quarrelsome; people will want nothing to do with you; they will go out of their way to avoid you.

"It is good to be pure, clean, decent, truthful, brave, friendly, hospitable, **energetic, bold, chaste, generous, kind-hearted toward strangers, diligent, independent, modest, condescending, sociable, merciful, religious, devout, warlike, honorable, hearty, grateful, loyal, vengeful toward enemies, and industrious.**

"An elderly man of the household or a chieftain would often speak to the people late into the night, admonishing and instructing them—especially the youth of both sexes—on how they should treat one another and live their lives. He enumerated for them the benefits of goodness and the consequences of wickedness, and also shared his ideas about the afterlife, etc. Thus, through his knowledge and experience, he taught and guided them. In winter, many nights are often spent with such talks, during which stories of war, hunting, and other tales, as well as mythological narratives, are recounted. The elders often took turns recounting myths and legends after everyone had gone to bed, continuing until everyone was asleep."

THE STATE OF MORALITY AMONG THE SELISH INDIANS

Later publications show that among the other tribes of the Selish group—such as the Shuswap and the Coeur d'Alène—the code of conduct is essentially the same. But not only is this "theory of morality" shared by all these tribes, but the actual state of morality among them is also relatively high.

1. A. Teit writes of the *Thompson River Indians*: "As in every people, there are good and bad individuals among them as well; but on the whole, they are more honorable and energetic, more intelligent and receptive than other Indian tribes. They are calm, sociable, and hospitable, but combine these last two qualities

often pride and suspicion. Some have a playful, humorous temperament, and others are courageous, determined, and persevering, although the latter does not apply to the tribe as a whole. Some, however, display these qualities to an exceptional degree when hunting or fishing. Since they are proud, they are easily offended; but they rarely allow anger to get the better of them. As a rule, they are not vindictive. They admire a man who is athletic, active, energetic, enterprising, persevering, brave, hospitable, generous, sociable, and kind."

2. Comparing the *Shuswap* with the Thompson River Indians, Teit paints the following picture of the former: "The Shuswap are good-natured and lenient toward their children, polite toward strangers, and kind toward their friends, although in this regard they are probably no different from other neighboring tribes. They are more reserved than the Thompson River Indians, have a more serious demeanor, and are, on the whole, perhaps somewhat less sociable and not as inclined to help strangers unless asked. But in general conduct, in honorability, and in their manner of speaking, they resemble the Thompson River Indians . . . Both girls and boys were carefully guarded from childhood onward, and they were not permitted to smoke or engage in sexual intercourse until after their coming-of-age ceremony. To indulge in such activities beforehand would (in their view) have a terrible influence on their future, would render their entire upbringing worthless, and would prevent them from receiving a guardian spirit for a long time."

3. Ross Cox (1812–14) had already described the *Flatheads* as honorable in their conduct, brave in battle, obedient to their chiefs, clean in their habits, and staunch enemies of deceit of any kind. The women were said to be excellent wives and mothers, and he had heard of no case of infidelity. He was delighted by their open and hospitable welcome and their superior cleanliness compared to all other tribes. Strict monogamy prevailed among them; upon their first arrival, the missionaries found only a single man in the entire tribe (numbering several thousand) who had two wives.

i. SUMMARY

The examples cited of moral standards and codes of conduct among indigenous peoples could be multiplied many times over. All summary accounts of the morality of primitive peoples are such that they can certainly hold their own among the moral laws of various peoples. And as far as the actual observance of these laws is concerned, these primitive peoples need not yield to any other people on earth; indeed, the extent and quality of this observance do no dishonor to the Supreme Being who established these laws for those people.

It is certainly astonishing for those accustomed to thinking in evolutionary terms to find, even among these most ancient peoples, not only such a relatively high standard of morality, but also such a far-reaching conscious understanding and affirmation of it—an understanding that recognizes its value and necessity and, based on this very insight—not merely by virtue of tradition—adheres to morality and formally practices practicing "asceticism" in order to

prevent this high good from being robbed by opposing forces within oneself and in the environment. This conscious appreciation of morality enables and motivates one not only to practice and preserve it within one's own generation, but also to ensure that it is passed on with the utmost emphasis to each successive generation and with the utmost care so that nothing of it is lost.

That is why a whole series of the oldest tribes, going beyond the family—where this education is first practiced—organize, at the time when the young person matures enough to leave the family and start a family of their own, a special, memorable instruction session that is jointly provided by the entire tribal group for a group of young people. An example of this was given in the first section (above, p. 463) regarding the Yamana of the Firelands. To illustrate the seriousness with which this instruction was imparted, let us briefly mention, in conclusion, the *Yuki* coming-of-age ceremony, which is held separately for boys and girls in Central California. This example is also interesting because it demonstrates a very close connection between ethics and religion, in that moral instruction is given in the closest connection with the creation story, which explains how the Creator established the entire moral and social order in the beginning. Just how important the Yuki Indians themselves considered this instruction is evident from the fact that the lessons continued day after day throughout the entire winter; among the Kato, instruction was given in the morning during the boys' initiation and in the evening during the girls' initiation—even from sunrise to sunset and beyond. We know from the Inland Yuki just how detailed—even laborious—this instruction could be. Each episode of the creation was first recited in song and then repeated in prose, and between the individual episodes, narratives, practical applications, and moral lessons were also inserted. We also learn from the Inland Yuki about the strict demands the old teachers placed on their ten- to twelve-year-old students: the boys had to sit motionless throughout the entire lesson from morning until noon; if one moved, the teacher would immediately stop his lecture. Parents or relatives often sat behind the pupils and supported them so that they could meet these strict requirements (see below, p. 497).

What we have learned in this and the previous section about the morality of humanity's oldest tribes is certainly more than enough to show that they are intellectually and morally capable of

receive, at the dawn of human history, a lofty revelation that also contained corresponding moral precepts, inspirations, and requirements.

5. THE RELIGION OF PRIMORDIAL CULTURE

a. FOUNDATIONS OF THE RELIGION OF PRIMORDIAL CULTURE

PSYCHOLOGICAL FOUNDATIONS OF THE RELIGION OF PRIMORDIAL CULTURE

If, as we have seen, the moral licentiousness, lawlessness, and anarchy postulated by progressive evolutionism did not exist, then an urgent and pressing question arises: Who, then, reined in the powerful instincts of the absolutely free people of those times, prescribed rules, and established laws? We have seen (above, p. 403 ff.) that at that time there was no authority whatsoever other than that of parents over their children; that there was no state authority, no legislative machinery in operation, no police to monitor, no judges to pass sentence, and no prisons or scaffolds for punishment. Even parental authority did not claim to have established moral laws, much less, of course, to have given them general validity extending beyond the individual family. Nor could such validity have come from a chieftain, simply because his already weak authority did not extend beyond the small territory of an extended family.

Who, then, gave these earliest humans—endowed with such immeasurable freedom—the laws that we actually see them recognizing and obeying?

The lawgiver whom these people follow is not visible to their eyes; the words of his commands are not audible to their ears; and yet they acknowledge his authority to command and understand his directives. Many of these peoples also believe that, with his omniscience and omnipresence, he follows them everywhere, even into their most secret thoughts (see below, p. 477 ff.). He terrifies them with the voice of his thunder when they have transgressed his laws, and can strike them down with his flashing lightning. He holds their very existence, their lives, in his hand; for it is from him alone that they receive the animal and plant foods he provides for them—but which he can also withhold. Even if he delays his punishments for a long time, he still awaits them at the end of their lives with his judgment, from which no one escapes.

For the belief in an afterlife with rewards for the good and punishment for the wicked is more firmly and clearly established in many of these religions than in some parts of the Old Testament.

In the earliest phase, the souls of these people were not yet overwhelmed by the phenomena that so often took hold of the souls of later indigenous peoples with such terrifying force. Here we find neither personifications of nature nor figures from astral mythology. The actual animistic spirits are either unknown or present only in faint traces; their more pronounced development does not begin until the primary culture of matrilineal plant cultivators. Nor is there any fear of ghosts or the dead here. The oldest of these peoples —such as the Tasmanians, the Kurnai of southeastern Australia, the Andamanese Pygmies, and the Negritos of the Philippines—carry the skull, and later also the arm bones, of a deceased person with them as cherished mementos *[cf. H. Breuil, p. 286]*; others dispose of all the deceased's belongings because they would evoke painful memories. Thus, they also have no cult of the dead to appease the deceased. All observers agree that among these peoples one finds incomparably fewer amulets and other magical objects than among later peoples; while the latter attribute special magical powers to them, they exploit this by selling these amulets and the like, which they themselves merely mock.

Thus, their soul is freer and more open and meets the influences of *the one* great power of the Creator unhindered. Moreover, they are more positively disposed toward this reception than later humans. For in primitive culture, those human specializations had not yet set in—specializations that, while perfecting him in some respects, cause him to atrophy in others; in any case, they make him one-sided and diminish or entirely deprive him of the gift of grasping the whole. The human being of primitive culture, however, is a holistic human being. He alone embodies life in its entirety; he alone crafts his weapons and tools, his dwelling and clothing; he alone satisfies all his basic needs. Thus, he is also better able to grasp the world as a whole, as a cosmos, and, through causal inferences familiar to him, to trace it back to *a* great and powerful Creator.

THE POSITIVE EVIDENCE FOR THE RELIGION OF PRIMITIVE CULTURE

However, it is not these more general considerations on which we base our understanding of the details of the religion of primitive culture, but rather

new studies and numerous research expeditions undertaken by trained ethnologists on both sides of the ocean, specifically among the oldest peoples, which have provided us with a wealth of new positive findings. I have collected, organized, and critically examined all of the material presented here in the first six volumes of my *The Origin of the Idea of God* (Münster i. W., 1926–1935).

In this work, I have provided precise source citations for all statements. It would go too far to list them all here.

According to my research, none of the old evolutionary theories are tenable anymore—theories that posited that belief in and worship *of a* supreme deity arose only from a multitude of lower beings through an infinitely long process of development; none of these theories had made an effort to determine the ethnological age of their evidence, but simply declared a priori that everything lower was older and everything higher was younger. This applies to the nature-mythological theories formulated regarding the polytheistic religions of the ancient Indo-Europeans, ancient Egyptians, and Semites; it also applies to the theory of Auguste Comte, who placed the multitude of so-called fetishes at the beginning of religion; and no less to the theory of Manism, according to which Herbert Spencer—using materials collected by others—had religion emerge from ancestor worship; even Edward B. Tylor's theory of animism—developed more carefully and with greater ethnological expertise, which derives religion from the multitude of nature spirits—cannot escape this judgment; finally, the theory of magism, put forward by various authors—according to which religion emerged from magic or broke away from an as yet undifferentiated mixture of religion and magic—shares the same fate.

The central tenet of all these evolutionist theories—that there could be no supreme beings, or supreme deities, among the most primitive peoples, but that these came into being only as the result of tens of thousands of years of development, had already been undermined in 1897 by the famous Scottish essayist Andrew Lang in his work **The Making of Religion**, in which he emphatically pointed to a series of undeniable instances of supreme deities even among the most primitive peoples. But the lively discussion that initially arose over this "apostasy" by an outstanding student—Master Tylor himself remained silent—gradually subsided, a trend further aided by the fact that A. Lang failed to find his way to a decisive historical method, and eventually silence threatened to envelop the "incident." But in that same decade, the cultural-historical method reached its full

maturity, and with this tool and on a much broader basis, **the** task could be tackled anew with greater prospects for success.

The task of facing, for quite some time, an overwhelming opposing force almost single-handedly was, of course, no easy one. But as early as 1926, I was able to point to a considerable number of researchers from all fields of the history of religion, ethnology, psychology, etc., who recognized the existence of a Supreme Being even among the most ancient peoples; and this number has continued to grow ever since. Prof. K. Meuli of Basel recently (1945) acknowledged that it is a "major achievement of Schmidt's comprehensive and scholarly research" that the belief in a Supreme Being among the most ancient peoples can no longer be disputed: "The overwhelming abundance of evidence leaves no room for doubt; the concept is indeed ancient, and one has had to resign oneself—albeit often reluctantly—to abandon or at least revise seemingly well-founded theories about the origins of belief in God."

b. NAME, DWELLING, AND FORM OF THE SUPREME BEING IN PRIMITIVE CULTURE

THE UNITY OF THE SUPREME BEING IN PRIMITIVE CULTURE

Based on the summaries I have compiled regarding the individual religious regions of the Primitive Culture—covering the vast region of Arctic, North, and South American religions; the Asian and African Pygmy religions; both regions combined; and the Southeast Australian religions —it becomes clear that during the era of the most ancient universal religion, which we can methodically deduce from those subregions, a great, dominant figure claimed the religious thought, feeling, will, worship, and obedience of humankind, such that we must speak here of a true monotheistic religion, a religious, morally oriented monotheism. For the sake of clarity, let it be stated at the outset that, in order to speak of true monotheism, what matters is not so much the small number of secondary religious beings, but rather whether they were created by the Supreme Being and remain determined by and dependent on Him not only in their existence but also in their purpose and their actions. If this is the case—no matter how great the number of these subordinate beings may be—true monotheism still persists; if one of these characteristics is missing or weakened, monotheism diminishes to the same extent.

In the religions of primitive cultures, at any rate, the number of these secondary beings is not large, so that the preeminent position of the Supreme Being cannot be called into question by this alone. Where they assume somewhat greater significance, we have been able to establish conclusively that influences from more recent religions have made themselves felt. This is the case with the figures of mothers, women, and children, which have been added to the Supreme Being in a few of these peoples (the Koryaks, the Andamanese, the Semang, and the more recent Southeast Australians). Among the vast majority of these peoples, the Supreme Being stands in majestic solitude, asexual and childless.

Subordinate to the Supreme Being—because he was created by it—the tribal ancestor nevertheless plays a not insignificant role in some of these religions. He was present at the time of creation when the Creator carried it out; he lived in the Creator's company, received a wife and child from him, and was given by him all the teachings of a social, moral, and religious nature that he was to pass on to his descendants on the Creator's behalf. In some of these religions (the Andamanese, the Yuki Indians in western North Central California, the Western Algonquins), the Creator must convince him—through formidable trials of strength—of the Creator's superiority and the creature's inferiority whenever he succumbs to the temptation to usurp the Creator's place. Originally, the Creator holds the animal and plant foods in his hand and gives them to humans daily. Later *[among more advanced hunters: cf. K. J. Narr, p. 518]*, this function regarding animal foods becomes independent, taking on a distinct form—the so-called "game spirit"—which can either grant or withhold game from the hunter. Such figures arise particularly among the Arctic peoples and the Northeastern Algonquians; among the Samoyeds, the emergence of this figure can be traced particularly well; more recently, Schebesta has also discovered this figure among the African Ituri Pygmies, and Baumann has extended this discovery to other African hunter tribes.

An enigmatic figure of mysterious origin is the representative of evil, who in every respect opposes the essentially good Supreme Being and often tempts humans to disobey the Creator, whereupon death enters the world—something the Creator did not will. As far as we can see at present, this figure does not belong to the oldest layer of Arctic-North American culture, though its seeds are already present within it. However, this does not give rise to dualism; for the Creator always remains the serene and superior being, granting humans only the freedom of choice.

1. The purpose here is not to present the more isolated, individual names by which the Supreme Being of a single people or a group of peoples is known—such as the "Great Spirit" among a number of North American Indian tribes—but rather names of greater, more far-reaching significance, which must therefore be attributed to a more ancient origin.

It is characteristic of these oldest religions that the name "Father" is the most widely used among them. This bears clear witness to the attitudes that people of those times held toward this Supreme Being; for the Father is the only one who exercises authority, and to whom the children are most deeply bound in love and gratitude. The name "Father" is widespread among all major groups of primitive culture: among the Samoyeds, in north-central California, in almost all subgroups of the Algonquins, among the Yamana of the Firelands, throughout southeastern Australia, among the Ituri Pygmies, and among some of the Bushmen. The name "Father" is used both in addresses during prayer and sacrifice and when speaking of God—whether simply as "Father," individualized as "my Father," or collectively as "our Father"; occasionally, even more solemn forms are used: Father in Heaven, Father of All, Our Great Father, Father of Life.

The next most common name—though it follows at some distance—is "Creator," which is also found in all larger groups. This category also includes the names "Owner," "Lord of Food," "Giver of Food," and the term "Lord"; for according to these peoples' conception of ownership, what one has made oneself belongs to that person (see above, p. 417). Thus, the Supreme Being is Lord of all and everything, because He is the Creator of them all (see below, p. 482 ff.).

2. It can be said of virtually all Supreme Beings in primitive culture that they now dwell in heaven. This is also the origin of the name for the Supreme Being in some religions, "The One Up There" (Olelbis among the Wintu Indians). Since a number of these peoples also attribute omnipresence to Him, the connection to heaven is, for that reason alone, not as close and strict as it later became in the culture of the pastoral peoples. Thus, among no people of the primordial culture does the Supreme Being bear the name "Heaven," as is the case in pastoral culture.

This looser connection between the Supreme Being of primitive culture and the heavens is also evident in the fact that, at the beginning of creation, the Supreme Being dwelt among humans on earth, directly—or indirectly through the ancestral

—with everything necessary for life, instituted their sacred ceremonies, and, among some peoples, even participated in them. This period is described by several of these peoples as the most beautiful and happiest in their entire history. Less widespread is the belief that this era came to an end because of human fault; this is taught by the Eastern North Central Californians (Maidu group), perhaps some Algonquin tribes, some Asian and African Pygmies, and the Kurnai in southeastern Australia.

Among a number of tribes of primitive cultures, the East has a special relationship with the Supreme Being; this is the case among all Asian and some African Pygmies, a number of Arctic peoples, the Algonquins, the North-Central Californians, and the Southeast Australians—that is, across such a vast geographical range that this relationship must certainly be regarded as something very ancient. Among the Asian Pygmies, the North-Central Californians, and the Southeast Australian Wiradyuri, God dwells in the eastern sky and goes there as soon as he leaves the world; accordingly, the souls of the (righteous) deceased also go to the eastern sky. Among the Arctic peoples and the Algonquin, the Gabon Pygmies, and the Yualeai of southeastern Australia, certain ritual acts in honor of the Supreme Being are performed facing east. This belief can hardly be traced to the sunrise in the east; for, first, the Supreme Being itself exhibits no solar associations, and second, it too goes toward the east. At most, these associations may be rooted in the general belief that the east is the place of life and all that is good, just as the west is regarded as the realm of death and all that is evil.

THE FORM OF THE SUPREME BEING IN PRIMITIVE CULTURE

Here the people of the primordial culture are at a loss when asked about the form of the Supreme Being; they answer with the utmost precision: “We do not know it; we have not seen him. True, the tribal ancestor who communed with the Creator must surely have seen him, but we—we have not seen him; he is invisible to our eyes.” And so, when they addressed Him or prayed to Him, they spoke and called out into the vast expanse, yet with the confidence that He hears and sees them. Thus, they attribute a kind of spiritual nature to him when they try to explain that he is like the wind and the like. Consequently, no image of him is ever made, nor is he ever portrayed in dramatic performances; his cult is always iconoclastic. Even when the Maidu dramatically reenact other figures from the creation story—the two ancestral parents,

even the herald of the Supreme Being—the Supreme Being himself is never depicted. The situation is similar among the neighboring, older Yuki-Kato group. In later phases, a path seems to lead toward the depiction of the Creator when the figure of the tribal ancestor has merged with him; this is the case with some Yuki tribes in north-central California and the Yuin in southeastern Australia. Among the latter, however, the figure revealed its tribal-ancestor origin by being one-legged, like the lunar tribal ancestor.

Under these circumstances, it is nothing short of sensational that P. Schebesta, on his expedition to the Philippine Negritos, discovered a tribe in which the Supreme Being is represented by a living old man who also receives all acts of worship—prayer, sacrifice, and others. Such a phenomenon is unheard of even in later stages of religious history.

In contrast, the belief that the Supreme Being does indeed appear in a form—though always only briefly and temporarily—that does not endanger spirituality but rather seems to express it has long been known and is widespread in primitive culture: namely, that he is of a bright, luminous, radiant, even fiery form. This belief is so characteristic that it is widespread among all groups of primitive culture; it is absent only among the Firelanders, so that one must certainly attribute a very great antiquity to it. Less widespread is the belief that the Creator is of great, even gigantic stature; this is the case among almost all Southeast Australians and among one Asian (Semang) and one African (Bambuti) Pygmy tribe.

c. ATTRIBUTES AND FUNCTIONS OF THE SUPREME BEING IN PRIMITIVE CULTURE

THE FULLNESS AND PERMANENCE OF THE ESSENCE OF THE SUPREME BEING

In the previous section, we saw how the people of the Primitive Culture seek to approach the Supreme Being on their own initiative by naming it and asking themselves where they can reach it, where its dwelling is. These are human questions that also threaten to anthropomorphize the Supreme Being. But the people of the primordial culture do not succumb to this danger: when asked what the Supreme Being looks like, what its form is, they do not conjure **up** a human-like figure in their imagination, but answer quite clearly and realistically: We do not know. And yet, throughout the tens of thousands of years of their existence—

remained unchanged; their religion has remained iconless not only in their beliefs but also in their rituals.

If we now inquire into the essence and nature of this Supreme Being of the primordial culture, we must always keep the aforementioned fact in mind here as well. This is especially true when, in accordance with our Western way of thinking, we break it down into individual characteristics and abilities in order to better grasp its nature and essence. Naturally, the people of the primordial culture are unfamiliar with such a breakdown. For them, this Supreme Being is a single, unified, great personality. They do indeed experience and recognize in themselves and others the diversity of the individual manifestations of this Supreme Being, but they do not categorize them. However, he does distinguish them from the good manifestations and qualities of human beings by the boundlessness of their potentiality—that which we express in German and English by the prefix "all" (mächtig, allmächtig) and in Latin by the prefix "omni" (potens, omnipotens).

In addition to this inner abundance, the people of the primordial culture recognize yet another profound difference between their Supreme Being—and its attributes and functions—and the human being. This difference lies in the duration of existence and activity. The people of the primordial culture know of every human being that there was a time when he did not exist, that his existence once began. They cannot even conceive of this with regard to their Supreme Being. It has always been there. It was there when no one else and nothing else yet existed. We express this lack of a beginning—when combined with endlessness—through the word "eternity." I have found such a word only among the Wiradyuri tribe of southeastern Australia; there, "burrambin" means "eternal," and the local Supreme Being, Baiame, bears the epithet "Burrambian," derived from it.

The other peoples of primitive culture, even if they do not know such a word, explicitly state that the Supreme Being has always been there, or deny that it ever had a beginning: this is the case among Asian and African Pygmies, as well as among one North American, one South American, and one southeastern Australian tribe. The Supreme Being alone—no one else—possesses this privilege. Only in the case of the representative of evil (see above, p. 472) do some of these peoples leave its origin in doubt; in others, it apparently arises without the Creator's will, from byproducts and waste products of his creation. It seems that even here there is an attempt to keep the ever-good and benevolent Being free from the origin of evil and to exonerate it.

As for the end of existence, the vast majority of peoples in primitive culture hold the belief that the human soul, too, no longer dies (see below, p. 481), so that the Supreme Being would initially seem to hold no special significance for them. Yet such a belief does exist, and a profound one at that; for the human soul enters this state of eternity only through the gate of death. For the Supreme Being, however, there is no death; it never dies. This is the case among the Asian and African Pygmies, the North Central Californians, the Algonquins, the Southeast Australians, and here also among the Fuegians—a distribution that suggests great antiquity. Only in the very few cases where the Supreme Being later merged with the progenitor of humanity does the latter's mortality also pass to the former—as is the case among the Yuin of southeastern Australia and some Yuki tribes of north-central California.

The belief in the eternity of the Supreme Being, which is so widespread in primitive culture, can be described as another aspect of the belief that for this Being, who created all other beings (see below, p. 482 ff.), there was no one who could bring it into existence and thus in any way impair or limit that existence; that it was therefore always there and always will be. Some of the beings it created, if they find this oppressive, then describe themselves as self-created. It is particularly the lunar progenitor, with the seemingly automatic becoming, growing, disappearing, and returning of the moon when it begins to rival the Creator (see above, p. 472), who bestows this title upon himself with the pride of a "self-made man"; this process is described particularly vividly in one of the younger Yuki tribes, the Inland Yuki.

OMNIPRESENCE AND OMNISCIENCE OF THE SUPREME BEING

Since the belief in God's omnipresence has less independent significance in primal culture but is closely related to the belief in His omniscience, this first pair of attributes refers to God's knowledge, while the second—omnipotence and omnibenevolence—refers to God's power and will.

Belief in the omnipresence of the Supreme Being could **also** be described as belief in His presence throughout all space. However, this belief is not so widespread or distinctive that **it** can be described as very ancient. It might perhaps be regarded as a later anthropomorphization of the belief in the omniscience—

, in that human knowledge always assumes that it must somehow be close to the object of knowledge in order to see “with one’s own eyes,” whereas true spiritual omniscience is entirely independent of spatial proximity or distance. Such omniscience, however, is attributed by such a large number of peoples of primitive culture—and in such a characteristic distribution—to their Supreme Being that this belief must date back to the earliest times of humanity. Even the notion that this Supreme Being also sees into the most secret stirrings of the soul, so that nothing remains hidden from it, is so strongly and characteristically widespread—among Asian and African Pygmies and Pygmoids, Arctic peoples, the Algonquins, and the people of Tierra del Fuego—that this belief, too, must already be very old, at least in certain regions.

The interest that the peoples of primitive culture have in the omniscience of their Supreme Being is not a speculative or theoretical one, but an eminently practical one. For this attribute is, in fact, most closely connected with the moral goodness of God. Omniscience is the means by which God’s moral goodness ensures compliance with the moral laws it has established, so that God may know which people to reward for observing them and which others to punish for transgressing them. This connection between omniscience and moral goodness is indeed most evident; yet there is also a relationship to affective goodness—the benevolence of God—in that, through His omniscience, the Creator is aware of every need and distress, no matter how hidden, and in His goodness comes to their aid.

Omniscience is one of the most sensitive attributes of the Supreme Being, in that it most clearly reveals whether He still stands at His full height or has already begun to decline from it. Such weakening of omniscience already occurs at later stages of primal culture. The Ainu also find themselves at such a stage in other respects; evidence of this is the hearth fire in the home, which paints an accurate picture of all the deeds of the people within its domain—a picture that will be presented to them at the Last Judgment. Among the Central Algonquian Fox Indians, who live quite far off, this “omniscience” of the fire and of the spirit of the seeing sky—separated from the Supreme Spirit—serves not so much the moral as the affective goodness of God, in that it allows even the faintest of human pleas to reach God. This concept is highly developed among the Wiradyuri of southeastern Australia, where the Supreme Being is fused with the Sky Rock, so that only the messengers of the sun and the moon come

and must report to Him what is happening on Earth (see above, p. 474). We find a somewhat earlier stage of this state among the Samoyeds, where the sun is his good right eye, with which he sees by day, while the moon is his less good left eye; in its fainter light, he uses the stars as ears with which he listens into the stillness of the night. Among the Halakwulup of Tierra del Fuego, the stars are the eyes with which he peers into the darkness of night, while during the day he needs no light, since the sun is shining then. We also find the belief that the sun and moon are the two eyes of the Supreme Being among a tribe of the Semang Pygmies, the Batek Nogn, and there are reasons to assume that this belief once existed among the other Semang tribes as well. A thorough study by Professor Junker reveals that the same belief was held by the ancient Egyptians, where the supreme god was regarded as the "Seeing God," but also, for a certain period, as the "Blind God," namely during the new moon, when he cannot see with the eye of the sun (at night) nor with the eye of the moon, because the latter has disappeared during the new moon.

OMNIPOTENCE AND OMNIBENEVOLENCE OF THE SUPREME BEING

Omnipotence and omnibenevolence are two attributes of the Supreme Being in ancient culture that are so widespread and characteristic that it is unnecessary to provide individual examples of them.

1. Omnipotence means that nothing is impossible for His power and that there is no power superior to or even equal to His. Not even the power of the representative of evil, so that there is no dualism of good and evil; here there is only the monism or monarchism of the good Supreme Being. That a sorcerer might be his equal or even superior would be unthinkable to these people, aside from the fact that in the primordial culture there are no sorcerers of such audacity.

The aspiring tribal ancestor, who begins to rival the Creator, is humbled by his defeat in trials of strength that the Creator passes with ease, while the tribal ancestor fails miserably—such as walking on the sea, moving a mountain, diverting a river, and the like. We find such motifs among the Samoyeds, the Western North Central Californians, some Northeastern Algonquins, and the Algonquinized Cayuga.

The Creator's dominion over health, life, and death is absolute; here, no antidote—whether negative or positive—can counteract his will. This inescapability is particularly evident in death and

illness of very beloved people—is perceived by some peoples as a hardship against which they rebel not only through lamentations but also through passionate accusations. We find this among Asian and African Pygmies and Pygmoid tribes, among the Ureskimo, and the people of Tierra del Fuego. These outbursts are testaments to the passion that can overwhelm them, but also to their intimacy with the Supreme Being, such that they dare to say such things to His face. Among the Yamana of the Firelands, once their emotions have settled, they also express a plea for forgiveness; we know of no definitive evidence in this regard from the others, but that state of rebellion does not become a permanent or widespread phenomenon. Only among the Central and Northern Andamanese might something of this nature have occurred, though other factors were also at play.

Since nowhere among the peoples of primitive culture did any individual possess great power or even unlimited power to rule, they had no opportunity to learn what later humanity all too often had to learn: that the greater the power, the lesser the moral and effective goodness became, indeed, that the possession of boundless power could well extinguish the last spark of goodness and transform the bearer of such power into a monster and a devil. Since the people of the primordial culture, under the circumstances of their time, could not yet have had such experiences, their amazement was not so great that they could not comprehend how, in their Supreme Being, not only could power be united with goodness, but omnipotence and omnibenevolence were united in Him—without the power diminishing or extinguishing the goodness, but rather with the goodness being able not to diminish the power, yet to temper it.

2. Nevertheless, it must have aroused admiration in those people that their Supreme Being—whom no one could prevent from doing as He pleased—nevertheless always did them only good; indeed, that all the good they enjoy—their lives, their means of sustenance and pleasure, which sustain and beautify their lives—comes from Him. And He gives them this good lovingly and thoughtfully, so that His concern for their fate is made evident. If there is now suffering, illness, and death on earth, then—according to the belief of a fairly large number of these peoples—there was a primeval age, back when God dwelt with them on earth, in which, by God's will, people had to endure neither suffering nor illness, nor did they have to fear death, and it was God's will that this should always remain so. People were never meant to die; rather, when they grew old, they were to wash or bathe, and their lives would begin anew in the full vigor of youth. It was only

the people's own fault that they followed the cunning temptations of the representative of evil, who desired death, and thus death came into the world. In a myth of the Wintu Indians, the seducer himself becomes the first to die as punishment; among the neighboring Maidu, it is the seducer's beloved son, and when the father then runs after the Creator—who is about to leave the world—begging with his son's corpse in his arms, the Creator gives him no answer, and death remains. Myths of this kind are found among the eastern North Central Californians and the western Algonquins; they have even penetrated the pastoral culture of the Nilotic Nuer. In all these cases, physical evils were first and foremost the consequences of moral ones.

Among a number of primitive peoples, we have accounts that God forgives even after the Fall and continues to provide for humanity; among several of these peoples, it is said that He Himself will bring about the end of time and then restore the bliss of primeval times. Among the Andamanese, the Semang, the Gabon Pygmies, and the Wiradyuri, this merciful God forgives sins committed even in this life; among the Gabon Pygmies and the Yualeai of southeastern Australia, he forgives sins even after death, provided prayers are offered and atonement is made on their behalf.

Moral goodness is always linked to affective goodness—kindness—so that the former does not degenerate into weakness and laxity. This Supreme Being punishes evil in human beings, even through death, and does not allow himself to be deterred by the fact that enraged people then call him the "killer." It is therefore not "evil," as some of these people say, but just and thus morally good, and even forgiving and merciful. Here, with this Supreme Being, there is also no "chronique scandaleuse," as there is with so many families of gods in later times; it would have been psychologically impossible for the people of the primordial culture to conceive of such things regarding their Supreme Being. Where hints of this appear in later times, it is always due to the subsequent conflation of the Supreme Being with the tribal ancestor, who brings his human, all-too-human qualities into this conflation. What the famous Australian researcher A. Howitt said about Mungan ngaua—"Our Father," the Supreme Being of the oldest southeastern Australian tribe, the Kurnai—applies to the older Supreme Beings of primitive culture: "He is the embodiment of those qualities which, from the Kurnai's perspective, are virtues worthy of emulation . . . magnanimous and generous toward his people, who wrongs or harms no one, but punishes any breach of morality with severity." From this Supreme

Being, therefore, no temptation toward evil could emanate; there could only be a strong impulse toward good.

Belief in this negative moral flawlessness, as well as in the positive moral and emotional goodness of the Supreme Being, is so widespread in primal culture that it must be counted among the essential elements of the oldest religion. A number of tribes of the North American-Arctic primitive culture seek to ensure moral perfection to such an extent that they exclude the all-causality of the good Supreme Being as the cause of both moral and physical evils in the world, and instead attribute them to an adversary of God, the essential representative of evil (see above, p. 472, 476).

CREATIVE POWER OF THE SUPREME BEING

The creative power of the Supreme Being in primordial culture can be regarded as the highest expression of His omnipotence, which is specifically affirmed as belonging to Him alone. Although the name "Creator" is not the most common name for this Supreme Being, belief in its creative power is so thoroughly widespread in almost all ancient cultures that it must undoubtedly be counted among the oldest elements of the religion of ancient culture. However, regional differences must have existed from early on, both regarding the object of creation and the degree of creative power.

1. Depending on the object of creation, some peoples emphasize the creation of the world, while others emphasize the creation of humankind; this can go so far that one or the other is not even explicitly mentioned. Although the number of anthropocentric peoples—among whom the creation of humankind is recounted in greater detail—may be greater, the number of cosmocentric peoples who begin their account with the story of the creation of the world is by no means insignificant.

Among the anthropocentric creation accounts are those of the Asian and African Pygmies; this account is particularly prominent among the Gabon Pygmies, where it exists in several detailed variants, while the creation of the world is touched upon only briefly. However, since we find traces of a cosmocentric creation account among the Asian Semang Pygmies—and since we know too little about the creation beliefs of the Negritos—the cosmocentric concept of creation may in fact be even more prevalent among them than it currently appears.

The creation beliefs of the older Arctic peoples are cosmocentric,

of the North-Central Californians—both western and eastern—and of the older Algonquians, whereas among the Fuegians there is fragmentation; among the Yamana, a near absence of creation beliefs; among the Halakwulup, a strong belief in creation but with few details; and among the Selknam, a division of creation between a Creator and a Demiurge. In the large bloc of Arctic-North American proto-culture, alongside the cosmocentric creation—which truly encompasses the entire world—the anthropocentric creation is not neglected either, and it is indeed the first human couple that is created.

The Southeast Australians occupy a sort of middle ground between the anthropocentric and the cosmocentric concepts of creation.

2. In terms of intensity, the creation belief of the large Arctic-North American cultural bloc undoubtedly takes first place. Not only are their creation accounts more detailed and heartfelt, but the concept of creation also occupies a more prominent place in their religious and social life. It forms the foundation and the main focus of instruction in their rites of passage for boys and girls and their major festive ceremonies. Among them, among several North Central Californians and Algonquins—and, though far removed from them, also among the Gabon Pygmies—it is reported that the Creator consulted with himself through meaningful planning prior to creation. Among the North Central Californians and the Northeastern Algonquins, as well as among the Algonquinized Winnebago Indians and the southeastern Australian Kulin, the Creator expresses his joyful satisfaction with the perfect success of his work after creation is complete.

The Southeast Australians also occupy a middle ground here, though they are closer to the Arctic and North American peoples.

Among the latter, the concept of creation reaches its highest expression: creation out of nothing—not merely the creation of matter out of nothing, but also the creation of a means, that is, a creation arising solely from one's own knowledge and will, as is clearly stated on multiple occasions.

While this consistent belief in creation is most frequently and clearly expressed in the large Arctic-North American bloc, we also find it among an African Pygmy tribe, the Gabon Pygmies, perhaps also among an Asian tribe, the Semang, and furthermore in southeastern Australia among the Kamilaroi-Wiradyuri. This suggests the possibility that the belief in creation ex nihilo was once more widespread and thus belongs to the ancient elements of the religion of primal culture.

3. Nowhere, however, among any of these peoples is the body of the first human created out of nothing. Among the various modes of creation we encounter, formation from earth is the most widespread. The oldest form is found among the Arctic American indigenous cultures, among one (or two) southeastern Australian tribes, and among one Asian and one African Pygmy tribe (though there, alongside other forms); thus, it must certainly have been fairly widespread in the most ancient religions.

Less widespread is the belief that the body thus formed received a soul and life through the Creator's breath. It is found in Arctic American, Pygmy, and southeastern Australian primitive cultures alike, but in all three it is less common—though still relatively more frequent than other forms of animation. This belief, however, is reinforced by the fact that in all primitive cultures, the oldest—and originally probably the only—form of the soul is not the shadow soul, the image soul, or any other type of soul, but rather the breath soul, which then returns to the Creator in heaven.

4. It can be explained as a universal belief of the oldest religion that God created a human couple who then became the progenitor couple of humanity; even if, as among the Gabon Pygmies, several couples were formed, they were always only couples—one man and one woman—never one man and several women. Thus, the Creator also presents himself as the founder of monogamous marriage. The idea that woman was created in a special way after man is found in various forms among the Western and Southern Central Californians, among some Algonquins, among the Joshua and a Selish tribe, among the Asian pygmy tribe of the Andamanese, among the African Gabon Pygmies, and among the southeastern Australian Kulin. Nowhere is it stated that woman was created before man, and in most cases the inner unity of man and woman is expressed in some way—often only very vaguely.

d. THE WHOLENESS OF THE SUPREME BEING IN PRIMITIVE CULTURE

I have already emphasized (above, p. 476) that the people of the primordial culture did not clearly distinguish between the individual attributes and functions of their Supreme Being nor experience them separately; rather, even when they experienced some of them more strongly, the others were always present, so to speak, within the wholeness of the living personal

of this Supreme Being. It would be good to emphasize this fact once more now that we have examined the individual attributes and functions, because it is precisely from this point that we can make the proper transition to the question of human behavior toward this Supreme Being. I do not believe I can do this any better than with the words I used in my Synthesis (The Origin of the Idea of God, Vol. VI):

"This influence (of the entirety of the image of God at that time) on the minds and hearts of the first humans begins immediately with the unity and oneness of the Supreme Being. The solitude of this Being before the creation of humankind—who has neither companions nor wife nor children—must have been a mystery full of awe-inspiring mystery to the people of that time, since they themselves had never lived any other way than in human community and, upon reaching maturity, never any other way than with a wife and children. This solitude of the Supreme Being must have filled them with wonder and admiration, for throughout all ages He remains the One and the Same in His eternity, while on earth human beings came and went through birth, life, and death—which He holds in His hands—as well as the eternity of souls, which He determines and decides. This solitude must have overwhelmed them, as they saw no one beside Him who was even remotely His equal; when they saw how He fills every part of the vast world, for He alone created it, just as He is the Creator of all things and all people.

"This timid wonder and admiration intensified when they had to admit to themselves that this great Being—whose undeniable reality was attested to by the immense effects of his power—could not, however, be grasped through the senses of sight, hearing, and touch, by which they themselves on earth initially convinced themselves of existing realities; when they thus found themselves compelled to ascribe to Him a higher existence that transcends the senses. It is like a clumsy yet yearning groping when they now attribute to him, now here, now there, a form full of brightness, light, and splendor, clothing him, as it were, with that material element which is the most beautiful of all and seems to come closest to the naive conception of spirituality —with light and fire; or when they assign heaven to him as his dwelling place, which rises high above all lowliness and all the gloomy vicissitudes of the earth with unchanging steadfastness, and which, in its boundlessness, in turn seemed to correspond to the incomprehensible spirituality of the Supreme Being.

"It is a remarkable mixture of wonder that extends all the way to

can escalate into dread, and of admiration that compels even love, which already emanates from these elements of the oldest image of God. But all of this intensifies even further in the face of the union of two seemingly contradictory qualities—omnipotence and omnibenevolence—in the *one* Supreme Being.

"This earliest human, who at that time likely stood in hesitant awe before nature—which had not yet been subdued and whose forces threatened from all sides to crush the then still sparse inhabitants of the earth—must then have admired all the more, with timid wonder, the One who held all the forces and things of nature in His hand, whose voice was the rolling thunder, whose breath was the roaring wind, and whose gleaming eyes seemed to be the flickering lightning. Yet this could not have been a mere, detached wonder, for at that time humanity was entirely dependent, for the continuation of its life, on what nature itself provided in the form of animal and plant food, since it had not yet learned to intervene in the secrets of their production through animal and plant breeding. But if nature was now entirely subject to the command of its Creator, in what absolute dependence on Him must people have felt themselves at that time, especially since they did not accumulate food supplies but had to procure them anew day by day. Yet this awareness of absolute dependence on life for survival must have solidified into a feeling of paralyzing powerlessness in the face of the inescapable power that this Supreme Being exercised over human life and death and over their fate in the endless afterlife. Human beings would indeed have had to sink into this terrifying sense of absolute nothingness in the face of the boundless power of this *one* Supreme Being over all other beings, including humans, if this omnipotence alone had constituted its essence.

"But that was not the case. There was also the omnibenevolence of this Being—not merely on a par with omnipotence, but, on closer inspection, standing above it, in that while omnipotence was indeed subject to omnibenevolence, omnibenevolence itself would never have had to submit to omnipotence. This became evident to many of these peoples immediately after the creation of humankind. No sooner had the Supreme Being, in His irresistible creative power, called human beings into existence out of nothing than this Creator, as it were, personally hastened to their side—not only to shower them with every conceivable material good, but also, through His personal presence here and His personal efforts in education and instruction, to convince them of how good He was, and how, as far as he was concerned, he was determined to provide them with every good thing

so that he became the Creator and Giver not only of the physical but also of the social and moral life of humankind.

"His unchanging goodness is also revealed in the fact that he did not abandon them even after they had abandoned him; that although he could not grant them eternal life here on earth—which they themselves, following the tempter, refused to accept from his hand—he nevertheless continued, with fatherly care, to provide them day after day and year after year with the sustenance they needed to sustain their earthly lives . . ."

Only from this prehistoric image of God can we fully understand **why** the earliest humans, in the solitude of the vast earth, did not lose heart; why the bonds of family, customs, and social care (which endured for many tens of thousands of years, right up to the earliest periods of primary cultures, especially pastoral culture) were not severed but held firm, enabling human life and activity, and that the strength to move forward did not wane. Certainly, far greater recognition should be given than has been the case so far to the fact that extremely valuable energies for work, responsibility, the drive to advance, and the unity of humanity still stem from these ancient times, and that what built them up and strengthened them in later times was, in many cases, merely a return to those forces and a renewal, a restoration, of them.

If such profound and comprehensive spiritual influences emanated from the overall image of this Supreme Being upon the earliest humanity of that time, in what way, and by what means, did this humanity react to these influences, respond to these calls, and give God an account of the powerful stirrings He had aroused in their souls?

These questions will be answered in the following section, which will discuss the cult of the earliest humanity.

e. THE CULT OF THE SUPREME BEING IN PRIMITIVE CULTURE

INTRODUCTION AND BASIC CONCEPTS

In the early days when belief in the Supreme God became known even among the most ancient peoples, the accounts of this belief were, for many of these peoples, often still fragmentary, incomplete, and lifeless. In particular, regarding several of these Supreme Gods, it remained doubtful whether human beings, for their part, entered into a relationship with them as with a two-

person or whether they merely spoke of them as a third person. At that time, a number of authors clung precisely to these cases, generalizing them as if they were the typical examples of these supreme deities. But then they went on to claim that the relationship between humans and these supreme deities was not a religion at all, since it lacked the element of worship. It was merely a "worldview," a kind of primitive philosophy, with the help of which these peoples satisfied their—more or less purely theoretical—need for causality regarding the origins of the world and humankind. N. Söderblom, an outstanding proponent of this view, then coined a special term for these figures; he called them "Urheber." The word "Urheber" soon disappeared from the literature again, for material poured in from all sides—from the most diverse peoples of the primordial culture who practiced a living cult of the Supreme Being—to such an extent that it became, and still is, superfluous to examine the "Urheber" theory in greater detail; it belongs solely to history.

The Supreme Beings of primordial culture were thus the object of a cult on the part of the people of that time. That there are variations—more or less, an increase or a decrease—among the individual peoples is natural and will also be demonstrated in concrete terms in the concluding summary. Although the term "cult" for this relationship between humans and the Supreme Being has become quite common, it is not entirely satisfactory. The main point is that people do not merely passively endure the Creator's influence upon them, but rather respond to it in their souls. This can happen in two ways: through their will and through their emotions. Through their will, they obey the moral and social demands that this Supreme Being places upon them. We have already seen at length (above, p. 468) that they do this willingly and generally—taking into account common human weaknesses. By this very fulfillment of the Supreme Being's commandments, He ceases to be a mere theoretical "author"; He does, in fact, exert a moral influence on the most diverse circumstances of human life.

It is, of course, true that this fulfillment of the commandments of the Supreme Being need not necessarily be connected with a personal turning of the human being toward the Creator. Yet it is precisely in this that the essence of religious worship lies: that the soul, of its own personal initiative, enters into communion with the Supreme Being,

in such a way that a *mutual* connection now comes about between the divine and the human person, between the divine and the human "I," from "I" to "You" and from "You" to "I." The fact that such a turning of the human being toward God also constitutes a veneration of God—insofar as the human being expresses trust in God, recognition of God as Creator, gratitude, and love, and thus offers worship to God—certainly has its significance, which lies in the fact that it becomes evident how God's influence on the human being has not been in vain, and that man adopts toward the Creator that inner and outer attitude to which he is driven not only by moral obligation but also by his own heart. But what remains most important in all expressions of this worship is that the mutual personal relationship between the Supreme Being and man be vividly expressed.

Prayer and sacrifice are usually regarded as the two main forms of worship. Compared to sacrifice, prayer is the simpler and thus seemingly the primary form; for prayer requires nothing else, whereas sacrifice also requires an object to be offered. One may accept this line of thought, though one should also bear in mind that there are peoples who believe one must not approach God (even in prayer) without an offering. Under no circumstances, however, should sacrifice be regarded as a lower form of worship compared to prayer, as Fr. Heiler does—albeit with some hesitation, for example, regarding the sacrificial offering. Nor should one overemphasize that prayer is the older form of worship and sacrifice the younger; in primitive culture, where people go out every day in search of food and do not partake of the food they have obtained until they have offered a firstfruits sacrifice to the Creator, both prayer and sacrifice are nearly of the same age. Finally, when one considers that prayer encompasses not only supplication but every form of communication with the Supreme Being, prayer and sacrifice are also fundamentally one in that both constitute a dialogue with the Creator, with sacrifice generally being a more emphatic form of communication with God than mere prayer.

PRAYER IN PRIMITIVE CULTURE

Prayer in whatever form is so widespread among the peoples of ancient culture that it must certainly be regarded as an integral part of the oldest religion. The evidence for the practice of prayer would

even more numerous if some field researchers—who have little or no interest in religion—had paid more attention to prayer and possessed a greater aptitude for documenting it. The number of such examples would be even greater were it not for the fact that some forms of prayer are so difficult to grasp that they could escape the notice of even well-trained and well-intentioned researchers.

Four types of prayer can be distinguished among the peoples of primitive culture:

1. Prayer in unformed words, newly formed each time according to the occasion, usually spoken briefly and without particular emphasis. This type of prayer has certainly often gone unnoticed, because it requires precise knowledge of the language and great familiarity with the lives of the indigenous people. It is, however, the most common form of prayer, and it is precisely this type of prayer that bears witness to the fact that the religion in question is still alive—not merely a matter of tradition—and that it permeates life in all its details.
2. The widespread practice of formal prayer—using words established long ago—is so characteristic of the various groups that it must already be considered one of the ancient components of religion. It indicates that the religion in question has existed for quite some time, but does not always guarantee that it is currently vibrant.
3. Prayer practiced purely inwardly has certainly not become known as such in many cases; indeed, it can only be recognized if the person praying reveals it. This form of prayer is therefore of particular significance because it testifies to the believer's faith that the Creator perceives and understands even the innermost, wordless stirrings of the soul just as He does prayer spoken outwardly in words.
4. Prayer is more clearly evidenced in gestures, which are sometimes accompanied by words but often consist solely of characteristic movements of the arms, hands, and the entire body, intended to express something very specific. This form of prayer has certainly not been recognized as such by some authors; they may describe the strange gestures but do not know how to interpret them.

Some will be surprised to learn that even among certain indigenous peoples, regular prayers—such as morning and evening prayers and grace before meals—are practiced.

It is not so surprising among these distinct hunter-gatherer peoples that, even more so than morning and evening prayers, there are—

prayers before hunting and fishing are more widespread among them, whereas a prayer (by women) before gathering plant food is encountered less frequently. This is understandable, since hunting involves greater effort and success is more a matter of "luck," whereas plants can be found more easily and reliably. We find evidence of this prayer before hunting and fishing among the North Central California and Algonquin Indians, among (African) Pygmies, and among the Southeast Australians.

THE SACRIFICE. THE PRIMITIAL SACRIFICE IN PRIMITIVE CULTURES

In all primitive cultures, the only form of sacrifice is the primal or first-fruits offering from the proceeds of hunting, fishing, and plant gathering; in a smaller group of tribes, there is the expiatory sacrifice offered with one's own blood, which will be discussed in the next section. Sacrifices of other kinds are so exceedingly rare in primitive cultures that they cannot date back to the earliest times but must be regarded as having arisen from the influence of later cultures, particularly matrilineal agricultural cultures.

1. The Pritial offering—both animal and vegetable—is most widespread in Pygmy culture; its rites are also most diverse there. The Pritial offering is more uniform but still abundant among individual tribes in the Arctic cultural sphere; the vegetable first-fruits offering is absent, partly due to the climate. A similarly uniform occurrence is found among the Eastern Algonquins; among the Central and Western Algonquins, the vegetable Pritial offering is also present. Evidence of Pritial offerings, which at first seemed rare, is appearing with increasing frequency among the Algonquins; it is ancient there, as evidenced by its central role in the Delaware's Twelve-Night Festival and its ritual solidification in the Western Algonquin's seven-day Creation Mystery. Both animal and plant first-fruit offerings occur sparingly among the more recent Maidu group of north-central California. Among the Selish Indians, the animal first-fruit offering is absent. The absence of the Pritia offering is noted: in the older Yuki group of north-central California, among the two oldest Tierra del Fuego tribes, the Yamana and the Halakwulup, and finally in the entire southeastern Australian indigenous culture. After careful consideration, I believe I must conclude that all of early humanity originally practiced the pritia sacrifice; the two groups that migrated the farthest—the Tierra del Fuego peoples and the Southeast Australians—have lost it; we can still observe such a loss today among the Central African Pygmies. The same must be said of the Yuki, as an outermost peripheral group; since they exhibit similarities in many other important respects with the Samoyeds, who still practice the pritia sacrifice extensively today, they must have possessed it in the past as well.
2. The fact that the firstfruits offering originated uniformly among the peoples of primitive cultures who still lived together in a single group is evident from the fact that even today the various types of firstfruits offerings—which differ in object and custom—are not geographically separated but overlap with one another.

Thus, not only the animal but also the vegetable primitial sacrifice exists in both the Pygmy and the Arctic-North American primitive cultures; the fact that the vegetable primitial sacrifice is absent among some tribes of the Arctic-North American primitive culture is easily explained by their Arctic or boreal climate. One must assume that the region of origin of the first-fruit offering was closer to the Pygmy regions than to the Arctic-North American ones. Specifically with regard to animal first-fruit offerings, two groups can again be distinguished, whose distribution coincides with that of the previously mentioned classification yet also reveals an overlap between the two: the Pygmies offer the internal, vital (soft) parts of the animals—heart, liver, lungs, stomach, and fat; the peoples of the Arctic-American indigenous culture offer the animal's "hard" parts—the unopened skulls and long bones—but not the bones themselves, rather their contents: the brain and marrow, which, as vital internal parts, thus correspond once again to those of the Pygmy cultures. Another overlap between the two groups is evident in the fact that the Gabon Pygmies also sacrifice the head (of smaller animals) or the right side of the head (of larger animals), while some Northeastern Algonquins also offer internal soft tissues, such as the heart, fat, and pieces of meat.

3. The rite of the first offering is as simple as can be: the object in question is thrown or placed on the ground or in the forest, whether it is of animal or plant origin.

Among very few tribes—the Gabon Pygmies and some Northeastern Algonquians—the piece is thrown into the fire. But especially for the animal first-fruit offering, a somewhat more careful method already emerges in the Pygmy proto-culture, in which the small piece of meat is wrapped in a leaf and set aside in this manner; the Gabon Pygmies enhance the solemnity of a particularly ceremonial Pritia sacrifice by ensuring that the leaf in question is taken from the tip of a plant as its first fruit and must be completely intact. Among some tribes, this piece of meat, wrapped in this manner, is not placed on the ground but rather in the branches or the hollow of a tree. A similar rite is practiced almost universally in the skull and long-bone sacrifices of the Arctic American prehistoric culture and in the cave bear skull sacrifices of the Upper Paleolithic Swiss Alps *[cf. H. Breuil, p. 288]*. The new, more meticulous ritual likely arose from the desire to protect the sacrificed parts somewhat from predators.

During the decades in which I studied the first sacrifices of primitive culture, I sought to gain an ever deeper understanding of their nature. I do not believe I can present this subject any better or more concisely than I did in Vol. VI of my work *The Origin of the Idea of God*, and therefore reproduce it here; I proceed from the fact that the object of the primal sacrifice always consists solely of (animal or plant) foodstuffs, never of other objects:

"Of course, the Supreme Being has no need of food. But that is not why it is offered in the first place; nor can there be any question of enriching Him or even feeding Him with it, since He already possesses all animals and plants in abundance and causes them to grow anew every day. Thus, it is clear that the person offering the primal sacrifice does not so much wish to give something as to say or express something, and this, in short, is this: food is the means by which humans continually acquire new life—that is, prolong and continue their old life. Just as the prehistoric human believes that he received life in the very beginning from the Creator, so he believes no less that it is the Creator who continually prolongs life through the food He bestows upon him.

Only the Creator can provide this food—not only because He created it and it is therefore primarily His property, but also because humans do not consume dead minerals as food, but only that which contains animal or plant life, and since only the Creator can give this life as well, it is likewise His property. The Supreme Owner has now made this dual property available to human beings for the sustenance of their lives, but under the twofold condition that they use it sparingly and considerately, and that they willingly share it with their fellow human beings. By fulfilling these two conditions alone, these primitive humans acknowledge the Creator's primary and supreme right of ownership over food and, at the same time, that their own ownership of these things is only derivative and conditional. However, they have also chosen to express this acknowledgment in another way—namely, through the primitial offering—by setting aside a small portion each time before they partake of these foodstuffs for themselves; this portion, which in the case of hunted animals represents the more valuable ones in terms of either actual value or symbolism, is withdrawn from their own consumption and given to the Most High as recognition of His primary ownership . . ."

This acknowledgment of the supreme ownership is the primary purpose of the Primitial offering, and it thus becomes an offering of praise and thanksgiving; accompanying short prayers often explicitly express this purpose as well. The prayer of praise and adoration is naturally followed by thanksgiving for God's gracious care, which is also frequently expressed in accompanying prayers, so that the firstfruits offering thus becomes a sacrifice of thanksgiving as well. Only now does the petition emerge that the Creator may continue to exercise the same gracious care in the future, which is likewise expressed in accompanying prayers; thus, the firstfruits offering also takes on the character of a petitionary offering. Perhaps one could also attribute to it the character of a sacrifice of atonement, in that these people—because they take the lives of animals and plants—which were not given to them by themselves but only by the Creator—in order to sustain their own lives, offer precisely the vital parts to the Creator; however, this view is not substantiated either by accompanying prayers or in any other way as being that of the indigenous people themselves.

4. It is certainly highly astonishing to observe, even among the most ancient peoples we can study ethnologically, a sacrifice of such high spirituality—not merely in isolated instances but practiced on a vast scale—whose vitality is also evident in the diversity of forms that was already beginning to emerge at that time. Our astonishment must increase even further when we realize that this sacrifice is not the expression of a rare, elevated surge of the spirit, but is practiced day after day in the most ordinary "daily life." It is fitting, then, that its rite is the simplest and most unadorned conceivable.

This sacrifice is the oldest sacrifice that humanity offered to the supreme deity, not least because for tens of thousands of years it was the only sacrifice—if we disregard the expiatory sacrifice of one's own blood, which was practiced only in limited regions. Its great antiquity is also evident in the fact that it encompasses all later specialized sacrifices—perhaps even the sacrifice of atonement—so that it soon becomes clear how easily all these later sacrifices could have been derived from it.

The discovery of the primal sacrifice's great antiquity and its long-standing uniqueness has refuted all those evolutionary theories that sought to trace the sacrifice back to lower forms. It cannot have originated from the food placed at the graves of the dead, for this custom is unknown to the peoples of primitive culture, among whom the firstfruits offering was already widely practiced;

nor can it have originated from the sacrifices of animal husbandry or agriculture, in which humans apparently sacrificed something of their own, for for tens of thousands of years there was neither animal husbandry nor agriculture on Earth, whereas the firstfruits offering had long since been practiced.

THE SACRIFICE. THE EXPIATORY SACRIFICE OF ONE'S OWN BLOOD IN PRIMITIVE CULTURE

The sacrifice of one's own blood as an atonement for one's own sins first became known among the Semang Pygmies. When a thunderstorm approaches—in whose thunder they believe they hear the voice of their supreme being, Kari ("Thunder")—they cut a wound in their knee with a bamboo knife, collect the blood in a bamboo vessel, mix it there with water, and hurl the mixture toward their supreme being; as the thunderstorm intensifies, they also confess their sins aloud. The second form of this sacrifice later became known from an African Pygmy tribe, the Gabon Pygmies, where, in the event of a severe hunting misfortune, the chief must make incisions in himself and offer the flowing blood to the Creator; among some groups of these Pygmies, the blood from an animal first-fruit offering made upon the appearance of an eastern rainbow is also mixed with a few drops of their own blood obtained from an incision in the right arm. The third and least significant type is found among the East Pomo Indians of north-central California, where, to heal a sick person lying on the ground, after invoking the Creator, a spear was thrust into the sick person's chest so that "blood" would spurt out; this, however, consisted of the red juice of certain berries, which was concealed in a gut pouch under the clothes.

This was the extent of what was known when I carried out the synthesis of this type of sacrifice in 1935 (see above, p. 493). At the time, I expressed doubt as to whether the North-Central California form belonged here; regarding the two forms of the Asian and African Pygmy tribes, I did not rule out the possibility that both Pygmy tribes had adopted an element originating from a foreign culture—in this case, a matrilineal one—and incorporated it into their religious practices with their characteristic skill. Even back then, I should have emphasized that these so-called expiatory sacrifices are not sacrifices at all when compared to the numerous primitial sacrifices; for in primal culture, human blood is not a food source for anyone. This so-called sacrifice would thus be more of a symbolic act intended to express that, through the flow of his blood, man must actually suffer death as punishment for his sins, which God now graciously forgives.

A few years later, Prof. J. M. Cooper (1940) published a treatise whose information he drew from a 1,000-page manuscript compiled by the American civil servant J. M. Garvan as the result of his investigations in the Philippines between 1903 and 1924. From this vast treasure trove, Cooper presents only a brief, condensed account of cultural connections among the Asian Pygmies. Among these are surprising reports regarding the widespread practice of blood sacrifice, even in the Philippines. What is most astonishing is that the name of the Supreme Being among several Philippine Negrito tribes is identical to that of the Supreme Being of the Semang in Malaya: Karei, Kari, Kayi: for example, Kayai among the Northern Camarines Aëta on Luzon, and Kadai among the Central-Western Zambales Aëta and the Baluga in Eastern Bulacan. Among the Baluga Aëta in Eastern Bulacan, the blood sacrifice is performed in a manner identical in every detail to that of the Semang in Malaya. A large number of Aëta from Mindanao practice a variant: they prick their fingers and spray this blood in the direction of the thunder, whose lord is the supreme being Baya, who expresses his wrath over a committed sin through thunder. Among some Aëta in Eastern Mindanao, thunderstorms are attributed to evil spirits in the heavens, and on several occasions during a thunderstorm, Garvan observed various individuals making a small incision on some part of their body and flicking the blood upward with their finger, saying, “Here is your blood; drink it.”

Thanks to these new reports, the distribution of this peculiar rite has expanded significantly and includes several variations; however, it remains confined to the Pygmies—most notably the Asian Pygmies—and thus could have had, at most, a regional distribution in ancient times. Nor have we made significant progress in determining the origin of this rite. It has been pointed out that this rite is not found among all Philippine Negritos. They, like the African Gabon Pygmies, practice both animal and vegetable first-fruits sacrifices extensively; P. Schebesta, as he told me in person, was able to observe on his second expedition—even among the Semang, of whom no first-fruits offerings were previously known—a vegetable offering of such a nature that it also serves as corroboration for the passive first-fruits offering of the Andamanese Pygmies.

SOLEMN CEREMONIES IN PRIMITIVE CULTURE. INITIATION RITES

Among the peoples of primitive culture, we find not only simple prayers and sacrifices but—to our great surprise—also richly developed ceremonies and festivals consisting of a series of prayers combined with one or more sacrifices, along with solemn processions and religious dances—not merely strung together in a superficial sequence, but forming a meaningful and beautiful whole. We encounter them not only among a few isolated groups, but among all groups of primitive culture; not in the sense that they can all be traced back to a single grand ceremony—they are distinct forms specific to each group—but precisely the fact that such rich ceremonies are found in all groups shows that an impulse for them must have originated in the earliest times, which then gave rise to many different forms over the course of history.

Some of these ceremonies are performed by a single individual, such as the profoundly beautiful celebration held by the Gabon Pygmy upon seeing a rainbow rising in the east, which is a sign of special favor from the Supreme Being. By far the greater part of these festivals is of a collective nature; they are held by the social group as a whole, which expresses through them an inner religious fervor that is stronger and has a deeper impact than that of the individual. But even in these collective events, the religious emotion of the individual can once again come to the fore—as when, in the Arapaho Indians' creation myth, the main character representing the tribal ancestor, a brave Indian, is overcome with emotion and bursts into sobs.

In these festive ceremonies, a strong contradiction arises against evolutionism, which derives everything—including religion—from small, lower forms. I myself must correct myself here, since I (in 1910) believed that among the earliest humans, only "childlike," rudimentary, simple, and unformed acts of worship were to be expected. We now see that these earliest humans, grappling with their inner religious impulses, also possessed the creative power to find meaningful forms of expression and shape them appropriately.

First and foremost, we must consider the collective coming-of-age ceremonies and separate initiation rites for boys and girls held among the Southeast Australians, the Firelanders, and the North Central Californians. Although these are primarily educational events—youth who have reached maturity receive, in addition to their family upbringing, a profound education from the community group—the

in some tribes extends over weeks, even months. In all these initiation rites, the Supreme Being plays the decisive role. It is said that the Supreme Being instituted these rites; among several of these tribes, this instruction is based on the creation myth. Among the Kurnai of southeastern Australia and the Native Americans of north-central California, the youth are brought into direct contact with the Creator through address and ritual; among the people of Tierra del Fuego, He is mentioned time and again. The rites conclude with particularly solemn ceremonies; however, the primitive culture lacks the sexual excesses and irrational magical elements common in later cultures, and no physical markings or deformations are performed.

In the oldest form, boys and girls undergo these rites of passage together, without separation or secrecy, which are intended to enable them to establish independent families. We find this form among the two Tierra del Fuego tribes, the Yamana and the Halak-wulup, and among the oldest southeastern Australian tribe, the Kurnai. In a more recent form, which likely already shows influences from later times, boys and girls receive instruction and initiation separately, yet collectively; we find this form among the two North-Central California groups, the Yuki and Maidu Indians. At a third, evidently even more recent stage, the initiation is not only separated by gender but takes place separately for each individual; this pattern is exhibited by the Algonquin and Selish Indians. Contrary to what I have previously stated, I am now inclined once again to the view that all three stages were preceded by a period in which family upbringing alone sufficed and was not followed by any collective initiation rite. It seems that we find this preliminary stage among the Asian and African Pygmies; in any case, the collective initiation of boys among the Ituri Pygmies is not indigenous to them but foreign. However, our information on this point regarding the Pygmies is still neither definitive nor sufficient.

Among the Western North Central Californians (Yuki group), the two older Tierra del Fuego tribes, and the oldest southeastern Australian tribe, the Kurnai, the intellectual-educational element predominates; but in the Yuki group, as among the Kurnai, the initiates are also ceremonially linked to the Supreme Being, and among the Kurnai, the tribal parent couple appears in the two whirring sticks. In the younger North-Central California group of the Maidu, dramatic performances are also included; although the Creator himself never appears, his herald and the tribal parent couple appear in magnificent

costumes. Among the Wiradyuri-Kamilaroi of southeastern Australia, the first rite of passage—performed by the Creator himself—is depicted in various figures, such as relief-like images formed from the earth or carved into tree bark, before which the initiates receive their instruction. Everything is brought to bear in these ceremonies so that the young people may carry with them into their increasingly independent lives a deep impression of this most comprehensive introduction to the social, moral, and religious ideals of their tribe.

3. It seems that the other solemn ceremonies are in some way connected to the rites of passage for young people, as if they had evolved from them. These festive ceremonies had penetrated so deeply into the minds and hearts of the people of the primitive culture, and had brought them so much joy and elation, that they often held them even when there were no young people to be initiated. This was particularly popular among the Halakwulup Firelanders and seems not to have been absent among the Yamana Firelanders either. We know from the Western Maidu Indians that a number of dramatic performances arose from the actual coming-of-age ceremony, though these no longer remained identical to it. The inner connection was established through the shared relationship to Creation, which was also outwardly manifested in the appearance of the Creator's herald, the ancestral couple, and the food spirits.

I would now like to place the three major celebrations of the widely dispersed Algonquin tribes within this same context: the Midewiwin rite of passage of the Central Algonquins, and even more so the annual thanksgiving festival of the Lenape-Delawares, celebrated over twelve nights, and the seven-day Creation Mystery (incorrectly called the Sun Dance) of the Western Algonquins, particularly the Arapaho and Cheyenne Indians. These celebrations share with those of the North-Central Californians not only an emphasis on the idea of creation; for the Eastern North-Central Californians and the Western and Eastern Algonquins, there is also the similarity of the myths of the creation of the earth and the origin of death, as well as the prominence of the tribal parent couple. The celebrations derived from the rite of passage into adulthood had to develop greater independence and distinct forms wherever their original basis—the rite of passage—had been lost. This is particularly the case with the Algonquin tribes, so that we can faithfully and legitimately link their extensive and profound creation celebrations to the creation-based foundation of the North-Central California rites of passage. Something similar likely exists in southeastern Australia as well, where the youth and

boy initiation ceremonies also place such strong emphasis on the idea of creation. If we now find a dramatic creation ceremony specifically among the Kulin tribes—among whom collective youth or boy initiation ceremonies no longer exist— we may well imagine that it evolved, much as in North America, from one of the ceremonial coming-of-age rites of tribes such as the neighboring Wiradyuri-Kamilaroi tribes to the north—all the more so since in both cases we encounter figures carved from bark, and in both cases a mystical origin of humankind from the earth plays a role.

f. WORSHIP AS THE CORNERSTONE OF RELIGION AND OF THE ENTIRE INDIVIDUAL AND COLLECTIVE LIFE OF PRIMITIVE CULTURE

We have now become acquainted with both the individual and collective acts of religious cult as practiced in primitive culture, and we cannot help but marvel at the vitality and richness found among a whole series of these peoples.

First and foremost, this is a confirmation of the inner life of the doctrines of this religion—proof that they are not merely theories, not merely a worldview without practical value, and that their Supreme Being is not merely a "Creator" who once brought the world and humankind into existence and merely satisfies their questions about the origin of the world and humankind.

Second, it is proof that this Supreme Being also answers their questions about the purpose and destination of life—not merely in broad terms, but down to the details of economic, social, and moral life—since He intervenes in it through His moral law, His omniscience and omnipotence, as well as His goodness and providence.

Third, He is the living revelation that they do not merely think of Him and speak about Him, but that they address Him, speak with Him, even though they cannot see or hear Him, that they relate to Him as one person relates to another, that here a human "I" dares to approach an immeasurably great and powerful "You" and address words to it, and that one of the most common names by which they address Him is "Father."

All of this also reveals that the influence of this Supreme Being on humankind has not been like a downpour rolling off hard rock or seeping into loose desert sand, but rather like warm rain falling on fertile soil and there bearing fruit—

life, and in receptive human hearts, the most precious of all—spiritual life. There may at times be feelings of fear, dread, even horror, when He descends amid lightning, thunder, and turmoil and encounters a sinful conscience; but we have also come to know willing, daily acknowledgments of His supreme rights as Creator and Owner, as well as grateful acknowledgments of His daily and extraordinary blessings, trusting requests for the continuation of His daily care, and urgent pleas in times of extraordinary need.

We have witnessed expressions of this kind from the individual who speaks quietly to the Creator in private, thanks Him, and prays to Him, proof that this religion is not merely a social affair but is also the individual possession of each person, undoubtedly with differences in religious aptitude and receptivity; and these very individuals linked the details of their economic, social, and moral lives to religion.

But it is not only the individual, but also communities as such that, in primitive culture, are the bearers of religious life in all the breadth of its possibilities and with a power of expression that far exceeds that of the individual, yet in turn exerts an all the more profound influence upon the individual. This manifests itself, so to speak, with spontaneous naturalness in the great religious ceremonies, but is also brought about with conscious intent—in part within these ceremonies, but more strongly in the rites of passage for youth, as well as later in the rites of passage for boys and girls. Even more so than in the acts of individual religious life, it becomes clear in these great public manifestations of religion that it encompasses and permeates the entire lives of these people of the primordial culture—not always, especially not to foreign eyes and ears, visibly or audibly loud or even intrusive, but often seemingly only sporadically and intermittently, yet in reality with an uninterrupted, quiet, yet powerful influence—like the soil that silently but steadily envelops and nourishes a tree's roots underground.

HIGHER HUNTING:
LATER STAGE OF HUNTING AND GATHERING

BY KARL J. NARR

I. DELIMITATION AND OVERVIEW

WITHINthe purely subsistence-oriented economy of hunter-gatherers, as E. Grosse (1896) already emphasized, two forms can be distinguished: a lower and a higher one. The "higher" economic form distinguishes itself from the hunting practices of the "basic cultures *" [according to the terminology of F. Kern = W. Schmidt's "primitive cultures," see p. 416]* through a "richer cultural development resulting from more favorable conditions." In the economic-ergological sphere, it is characterized by a noticeable and highly ingenious refinement of hunting methods, an improvement in the technical processes for the manufacture of weapons and tools—which are carefully crafted, often exceptionally beautiful in form, and frequently richly decorated—as well as, above all, by a greater accumulation of cultural assets compared to the meager material possessions of hunter-gatherers. This latter criterion allows it to be grouped with food-producing societies under the term "accumulative cultures" (F. Kern). Defining them as a "food-acquiring accumulative culture" seems to clearly establish their intermediate position within the system of economic stages, since, on the one hand, the accumulation of cultural goods makes it possible to group them into a larger unit with herders and farmers, while, on the other hand, the food-acquiring economic form also requires a grouping with hunter-gatherers. Practical difficulties in delineation arise from the unequal weight of the two perspectives, insofar as the unambiguous qualitative distinction between a food economy based on appropriation and one based on production allows for a clear separation, whereas this is not the case with the quantitative criterion of accumulation. In general, however, it can be established with sufficient clarity. Above all, advanced hunting cultures emerge quite clearly in the archaeological record as a distinct phenomenon, identifiable—through numerous similarities with the ethnographically documented advanced hunting cultures—as a part of this cultural phase that is documented solely by other sources.

Incidentally, this is also significant for the chronological dating of the basic ethnographic cultures, since the older prehistoric cultures (e.g., the Old and

Middle Paleolithic of Europe and Africa) are broadly comparable to these, the phaseological connection can, due to the extraordinary scarcity of sources, be based only on a small number of positive indications in the form of genuine qualitative characteristics [cf. O. Menghin, p. 443]. However, the chronological relationship between the Oldand Middle Paleolithic to the Upper Paleolithic and Mesolithic on the one hand, and that of the foraging base cultures to the phase of advanced hunting on the other, however, constitute a strong argument—given the correspondence of ethnologically and prehistorically younger phenomena—for the phasological equivalence of the respective older strata and thus for an absolutely greater age of the base cultures relative to the Upper Paleolithic.

When and where a more advanced hunter culture first emerged from the hunter-gatherer way of life of the basic cultures remains, for the time being, just as open a question as whether and to what extent this occurred due to favorable environmental conditions, as an "answer" to the "challenge" posed by harsh conditions—to use Toynbee's pair of terms here for a moment—or as a result of an internal intensification and development; or whether—which seems most likely—a combination of both sets of factors is responsible. In any case, an enriched variant of the basic hunter-gatherer culture must have formed the nucleus—most likely one that was already tending toward specialization in certain animal species, which would probably have been the case primarily in a region rich in game but poor in species diversity.

However, examining a single category of culture—in this case, ergology and economy—is not sufficient. As soon as we venture beyond this realm, we encounter some difficulties in distinguishing between the hunter-gatherer stage and the higher stage of hunting. Thus, among the "Arctic-North American primitive cultures," at least part of the "ice-hunting stage" and probably the entire "snowshoe stage" *[cf. W. Schmidt, p. 382]* should already be classified as higher hunting culture based on their material and social culture. However, if religion is taken as the starting point for systematization (e.g., W. Schmidt 1936), they fit almost entirely within the framework of the basic culture; for this reason, their representative groups (e.g., the Algonquins, Koryaks, and Samoyeds) were already addressed by W. Schmidt—at least in their older strata—and therefore need only be briefly touched upon here. However one may interpret this fact historically, in any case they occupy an intermediate position in the system, and it is largely a matter of definition—or, more precisely, of the characteristics chosen for classification—whether one wishes to classify them (because of their religious worldview) as still belonging to the basic culture or (because of their economic and ergological peculiarities) as already belonging to the higher hunting culture.

When considering advanced hunting societies, we must exclude cultures that once produced their own food but, due to harsh environmental conditions, have reverted to a hunter-gatherer way of life and thus outwardly appear as "food-acquiring accumulative cultures." This is the case, for example, with agricultural cultures that found themselves in the desert-like regions of inland Australia, where they had no means of cultivating crops but whose social order still clearly exhibits the agricultural, matrilineal structure. Conversely, however, a primary, more advanced hunter-gatherer culture may itself be driven into such barren areas that, under the new conditions, it loses many of its material possessions, larger social groups disintegrate, and only the smaller local groups that had merged into them remain—as a result of which the hunter-gatherer traits then become more prominent again. Thus, for example—not least through archaeological research (see p. 505)— — that the Bushmen of the Kalahari are meager remnants of a once widespread and flourishing "Euro-African hunter-gatherer culture" (see Baumann 1934), in which, however, the old hunter-gatherer element was certainly still particularly strong and which therefore likely also represents an archaic stage within the higher hunter-gatherer culture. Particularly subtle problems are posed by multilayered cultures, such as that of the Ituri Pygmies, in which, superimposed upon the ancient foraging foundation, lies a layer corresponding to the aforementioned Euro-African culture, and above that yet another layer of Negroid-plant-based elements. The middle layer, characterized by archaic advanced hunting, likely includes, among other things, the use of bows and some sophisticated hunting methods. Where such a stratification has already been clearly identified, as in the case of the aforementioned jungle dwarfs (Schebesta 1938–1950), we may use these findings to our advantage in describing the essential features of advanced hunter culture. A basic culture preserved in its entirely pure form is unlikely to be found anywhere anymore, and it is a difficult task to trace and uncover this ancient cultural phase beneath the overgrown, more recent phenomena—as, for example, in the cultures of the African Pygmies and Bushmen—and to reconstruct from it a picture of the basic cultures.

If, starting from the circumpolar hunter cultures already mentioned because of their intermediate position, we attempt to gain an overview of the occurrences of advanced hunter cultures, we must first mention several tribes of North American Plains Indians. In the Old World, these are followed to the south by the European-Siberian advanced hunter cultures of the Upper Paleolithic and Mesolithic, which were discussed in greater detail in the contributions by A. Rust and J. G. D. Clark. This is followed by the "Eurafrican hunter-gatherer culture," of which only meager remnants have survived in East Africa (Kindiga, Sandawe) and South Africa (Bergdama, Bushmen). In the South Pacific, hunter-gatherer cultures have been almost completely overshadowed and supplanted by agricultural and more advanced cultures; nevertheless, F. Gräbner was still able to identify the "West Papuan cultural sphere" here, which was then believed to exist as a "totemic cultural sphere" in other parts of the world as well and which is often equated with advanced hunter-gatherer societies in general *[see W. Schmidt, p. 389 ff.]*. However, we should probably regard it rather as a form of contact with agricultural culture—one that has become unilaterally rigid and, on its own, is unlikely to develop further—

such

. Yet even in Australian hunter-gatherer societies, some other, older forms begin to emerge once again.

f. THE CULT AS THE CORNERSTONE OF RELIGION AND OF THE ENTIRE EURO-AFRICAN STEPPE HUNTER CULTURE

Prehistoric Europe has been the most thoroughly researched, yet no hunter-gatherer culture was able to persist there. In contrast, regions with living hunter-gatherer cultures have been little studied archaeologically. The only exception is Africa, which currently offers us the best example of an archaeological-ethnological-anthropological synthesis in the sense of mutual complementarity and direct historical connection. For this reason, and because the African cultures corresponding in phase to the European Upper Paleolithic and Mesolithic are only touched upon in passing in the aforementioned prehistoric contributions to the present *Historia mundi*, a rough outline of the groups of finds associated with the surviving remnants of the Euro-African hunter-gatherer culture may seem appropriate.

Cultures that are phasologically equivalent to the European Upper and Middle Paleolithic are likely to have persisted in Africa, at least in some areas, well into the European Upper Paleolithic or even later periods [cf. H. Breuil, p. 272]. Aside from isolated occurrences of the “Pre-Aurignacian” type [cf. A. Rust, p. 294], the oldest reasonably coherent groups of artifacts of Upper Paleolithic character—such as the so-called “Kenya Aurignacian” (or Kenya Capsian) and, to a lesser extent, the Stillbay culture of South Africa and its relatives (the so-called “Middle Stone Age”), typological connections to the industries characterized by “blades with blunted backs”—which include, among others, the Châtelperronian of Western Europe—without it being possible to make more precise statements about the relative chronology. The same basic typological feature can also be observed in a number of more recent stone tool industries; however, this does not prove a generally ongoing local development. Rather, these more recent cultural groups, which share a microlithic character with the European Mesolithic, likely represent a superimposition over long distances. The influx of a new element, indigenous development, and substrate effects may have been responsible for the final characterization of a number of groups, of which only the Wilton-Smithfield culture, the Elmenteitians and Magosians of South and East Africa, the Capsians and Oranians in central and western North Africa, as well as the Sebilians of Egypt—who apparently still follow very ancient traditions [Levalloisian character: cf. H. Breuil, p. 271]. It can be considered certain that connections existed between North Africa and Europe, even if their extent remains unclear [cf. J. G. D. Clark, p. 319]. The general character of a more advanced hunter-gatherer culture is likewise beyond doubt for these groups; however, some of them had already absorbed influences from agricultural cultures or even from the advanced Egyptian civilization, in whose development they, incidentally, also played a role—at least in the form of a material substrate that is clearly evident (e.g., makeup palettes made of slate, beads made from ostrich eggshells), which may help explain certain social and intellectual phenomena of ancient Egyptian culture, such as

the division of districts by animal emblems and the cult of animals. The influences from this center of rural and urban culture were naturally directed to a particular degree toward the northern groups, while it remains unclear to what extent they also extended southward. At the same time, they demonstrate the relatively recent age of the younger strata of the aforementioned North African cultures.

The Wilton-Smithfield culture, and to some extent also the Capsian and other groups, share a number of elements with the Bushman culture (e.g., ostrich egg beads, painted ostrich eggshells, smoothing or furrowing stones, grave stake weights, slate palettes), which alone would justify a connection. Most significant, however, are likely the paintings and drawings on rock and cave walls, a large portion of which were created by the people of the Wilton-Smithfield culture and the Capsian. Although today's Bushmen and related tribes in East Africa no longer produce such paintings, various indications and old reports leave little doubt that their ancestors—as the heirs to a great artistic era—did so; this perhaps illustrates better than anything else the impoverishment of the present-day remnants of the Euro-African hunter-gatherer culture in their meager strongholds. The rock paintings take us back even further than the Wilton-Smithfield culture and the Capsian. A very ancient stylistic phase belongs to a culture of the Stillbay type, though this does not yet reach the time of the oldest paintings. Particularly characteristic and revealing, however, is a more recent pictorial style that can be traced from South Africa (local style phase 6) through Southern Rhodesia (style 4) and East Africa (style 1) to eastern Spain (style 3), where it is, at least in part, closely related to a Neolithic tradition of the Capsian type. It is these connections to the southwestern European Capsian influences and the eastern Spanish pictorial style [cf. F. Eppel, p. 367] that justify the term "Euro-African hunter culture" in the first place. Even beyond this particular stylistic phase, African rock paintings largely share the manner of scenic representation with the eastern Spanish group. Some provide us with deep insight into the lives of their creators—a source that is far from exhausted but which certainly confirms the connections to the culture of the Bushmen and certain other non-Negroid indigenous peoples of Africa. In addition to characteristic scenes from daily life—such as the men's drive hunts and animal-mask hunts and the women's use of grave sticks—a number of images depict events from Bushman myths, such as those involving the game and bush spirit Gauab. Still others show us cultural elements that have almost completely disappeared today, such as the whirring stick, the sling, and feather adornments. Perhaps most revealing, however, are those that tell us of encounters with representatives of other cultures. Thus, we find extraordinarily vivid depictions of battles between the small, light-skinned hunters and the tall, darker-skinned cattle herders [cf. H. Baumann, p. 168, S. Alcobé, p. 184], by whom (and later by the white colonists) the bearers of the Euro-African hunter-gatherer culture were driven from their natural habitat of the vast steppes into the barren, desert-like regions in which the herders and farmers, eager for pasture and arable land, had no interest.

Other depictions suggest connections to ancient Mediterranean (particularly Cretan) advanced civilizations (which, according to the research of D. Wölfel, survived in remote areas of the Canary Islands and Guinea until the present day—or at least until the time of discovery). In images from eastern Spain, we find men wearing the same headdress as in North African rock art and women in traditional dress strongly reminiscent of the bell-shaped skirt of Minoan Crete. The "White Lady" of Brandberg may reveal similar connections, and in the rock paintings of East Africa we even find the motif of the bull-leaper known from Crete (e.g., Leakey 1936, cover image). Finally, in the most recent layers of rock art in South Africa (Style Level 16), the white explorers and settlers appear.

Anthropological evidence provides the final link in establishing the historical connection between the early historical remains of the Euro-African hunter culture and its still-living, slightly modified remnants. The racial similarity between today's Khoisan peoples and the bearers of the Wilton-Smithfield culture has been unequivocally proven [see *H. Baumann, p. 173*]. But even in the much older Stillbay culture—which is associated with the rock art—a human remains of Bushman character came to light (Fish-Hoek), although, like the Boskop and Springbok forms, it is of greater stature. This likely also incorporates an Australiform element, represented by the Cape Flats find [see *H. Baumann, p. 174*; *S. Alcobé, p. 181*], which also appears to be evident in the Lower Oranien (C. S. Coon 1939). This Australiform element opens up far-reaching perspectives, because the Aurignacian Combe Capelle type—which belongs to this category—also appears at the base of the Western European Upper Paleolithic (Châtelperronian) [see *p. 509*], and, like the younger representatives of the Australiform layer (Brno Group) [see *p. 509*] of eastern Central Europe (Gravettian) belongs to the category of a "blade industry with a blunted back" [see *A. Rust, p. 293*], a group that also includes the microlithic groups listed above. If we add to this the fact that rock and cave paintings and drawings depicting hands—some of which show the finger mutilation also common among African and American tribes—were also common in Western Europe and Australia, then the idea of an ancient tradition of advanced hunting, now preserved only in isolated remnants in the southern part of the Old World, becomes compelling.

III. ORIGIN, DEVELOPMENT, AND SPREAD OF ADVANCED HUNTING CULTURE

Within the broad circumpolar cultural community, several cultural strata can be identified that were once widespread but are now found only in isolated, surviving pockets. The ice-hunting culture—characterized by hunting, particularly reindeer hunting, in the summer and fishing through ice holes on smaller inland bodies of water in the winter—extends from Northern Eurasia to North America and radiates far to the south from there. The invention of the snowshoe, which occurred at a later period, in contrast, made it possible to penetrate snow-covered forested areas and engage in winter hunting there. While the (Proto-Eskimo) culture of the reindeer hunters of the Barren Grounds corresponds to the ice-hunting stage, the Eskimo cultural sphere remained virtually untouched by the snowshoe culture and followed its own course. Through the Paleo-Eskimo stage—characterized by summer hunting in the interior and winter hunting of seals and walruses—it evolved into a Neo-Eskimo culture with advanced marine mammal hunting, particularly whaling. If one wishes to use the greater or lesser internal distance of the more advanced hunting cultures from a subsistence-hunting lifestyle as a measure of their historical sequence, then the oldest of the aforementioned

Arctic-American cultures—the ice-hunting stage of circumpolar cultural development—must be placed very early, immediately following the transition from subsistence hunting, since, depending on the criteria applied, it can be classified as either a basic culture or a higher hunting culture.

Among the hunter cultures in the southern part of the Old World, the Euro-African culture may indeed be relatively young in its fully developed form, but its roots certainly extend much further back. Within it, a hunter-gatherer foundation—which made a significant contribution to the development of the basic cultures—is still so vibrant that it has led to members of the Euro-African circle, especially the Bushmen, being classified outright as part of the basic cultures. It, too, therefore exhibits quite archaic traits. One might be inclined to attribute to it a transitional character similar to that of the ice-hunting culture. This, however, would raise the question of whether these two culturally distinct groups—so far apart from one another—arose independently from a northern and a southern proto-culture, or whether they and other advanced hunter cultures share a common origin. However, both the Euro-African hunter culture and its Upper Paleolithic foundations already exhibit quite unambiguous characteristics of a more advanced hunting culture—as evidenced, for example, by rock and cave paintings, which, along with other reasons, justify the assumption of a larger cultural unit of an early stage of advanced hunter culture extending from Upper Paleolithic Western Europe to Australia. (It can hardly be seriously doubted that this represents the chronological counterpart to the European Upper Paleolithic and Mesolithic; and if we designate the latter as advanced hunter-gatherer cultures, then we must also grant the same designation to the former. Although a direct dependence of the individual artistic regions on one another cannot yet be proven, at least similar foundations must be assumed.) In contrast, the "totemic (= West Papuan) cultural sphere," which is most clearly discernible in the South Pacific, appears to be a recent form of cultural contact due to certain phenomena that still require discussion. Finally, the advanced hunting culture of the North American Plains Indians must be mentioned as a likely fairly early offshoot of subarctic roots—insofar as it is of a primary nature—without this implying anything about the timing of its spread into North America.

We thus arrive at the assumption of a zone of advanced hunting culture in the north (ice-hunting, snowshoe, and Inuit cultures), which is contrasted by another in the south of the Old World. The latter can be divided into a number of more

or less independent groups (Western European Upper Paleolithic, African Upper Paleolithic, Mesolithic-Recent Eurafrican hunter culture, plus—as a likely very recent formation—the "totemic" West Papuan circle and perhaps a few splinter groups), yet it nevertheless exhibits a number of common features. Given their locations, the individual sites give the impression of having radiated out and drifted apart from an ancient core, which we may then likely seek further north, most likely in southern West and Central Asia. The circumpolar cultures could only have settled or resettled their present-day range during the post-glacial period; they must therefore have been located further to the southwest previously. In the vast region between the Caspian Sea and the Tien Shan-Altai mountain range, the advanced hunter-gatherer culture has today been almost completely displaced and cannot be directly traced in prehistory; however, its presence can be inferred from the discovery of artifacts of the same character as those found in the Eastern European Upper Paleolithic [cf. *A. Rust, p. 297*] near Lake Baikal. The inadequate archaeological exploration of Siberia does not yet allow for more precise conclusions. In the parts that have been studied so far, however, this Eastern European-Siberian group differs substantially in substance from the more southerly groups. How its geographical intermediate position should be evaluated historically remains to be determined for the time being.

The connections between individual groups and circles and specific anthropological types, as well as the insights derived from anthropology regarding the major biodynamic centers and lines of flow (v. Eickstedt 1934), offer us valuable assistance in the search for the point or points of origin of advanced hunter cultures. The connections between the southern advanced hunter-gatherer cultures and Australoid types [cf. p. 507] confirm the assumption of an original cultural unity, and their location supports the idea of a movement directed southward and outward, the point of origin of which may be regarded as the Greater Turanian region, from where they likely spread southward and southwestward along the South Himalayan current (leading via South Asia to Oceania) and the West Iranian current (via Arabia to Africa). The northern unit of the advanced hunter culture must also have been at least in close proximity to this area of origin—as thus identified—before it flowed into the circumpolar regions. The area of expansion of the East European-Siberian circle overlaps with both of these; however, due to its specialization in a particular direction [see A. Rust, p. 297] cannot, however, be considered the root of the other hunter cultures. The artifact-typological and anthropological similarities with the southern cultural unit [see p. 507] suggest that it was a culture from the same source basin that advanced into Europe via the West-Turanian route. Between the outermost extensions of these two waves—the older Western European (Châtelperronian) and the younger Eastern and Central European (Eastern Gravettian)—another group (Aurignacian sensu stricto) was interspersed in some areas [cf. A. Rust, p. 292], which, however, was apparently absorbed or overlaid quite rapidly by the other two. It is essential to note that the bearers of the Aurignacian (Cromagnon type) do not belong to the "australiform" stratum, but rather to the complex of the "Arctic proto-Europeans"

to which the Proto-Siberians, Proto-Eskimos, and Ainuids are also counted as further descendants (v. Eickstedt 1934). This makes it possible to interpret them as offshoots of an early split from the northern cultural zone. Perhaps this group, advancing southward or southwestward, separated the originally contiguous spheres of southern and Eastern European-Siberian advanced hunter-gatherer cultures and, following the northern (Asia Minor-Balkan) branch of the West Iranian cultural lineage, reached Central Europe, and via the southern branches, reached Syria-Palestine [cf. *A. Rust, p. 293*]. From there, their bearers may also have helped shape the anthropological picture of Africa, which could easily explain the presence of Cro-Magnon-like forms north (Crô-Magnon) and south of the Mediterranean (Medhta-Afalou) [cf. *H. Vallois, p. 104, S. Alcobé, p. 175, E. v. Eickstedt, p. 130*].

The zonal arrangement of the major cultural communities, however, also points to certain ties to ecological formations, which may one day help us insofar as the latter are not static, unchanging entities but have undergone considerable contractions or expansions due to climate changes, particularly during the Ice Age. A more detailed investigation of these changes—the opening and closing of glacial barriers, the advance and retreat of the tundra, the steppe, and the forest—may one day provide valuable insights into the possibilities and probabilities of migration, contact, and isolation among cultures and their bearers, which can be evaluated historically. Thus, the advance of northern hunter-gatherer cultures into the circumpolar region could not have taken place until after the last Ice Age [*see p. 509, A. Rust, p. 316; J. G. D. Clark, p. 318*], whereas the outflow of the southern group—judging by its first appearance in Europe—must have occurred earlier and should be viewed in connection with Late Pleistocene climate fluctuations [*see A. Rust, p. 296*].

It may seem surprising at first glance that, despite the inclusion of prehistoric data in the tentative attempts to establish a chronological order and stratification of the individual advanced hunter-gatherer cultures, far less use was made of the much more reliable archaeological stratigraphy. The reason becomes immediately clear when one considers that sufficient application of this method is currently possible only in relatively small subregions, which means that in each case only a chronological sequence of rather limited spatial significance can be determined. The fact that the southwestern European offshoots of the Euro-African hunter culture are younger there than the Western European Upper Paleolithic hunter culture says nothing about the general chronological relationship. Similarly, the circumpolar cultures are related to the Northern European Mesolithic [cf. J. G. D. Clark, p. 326], and it is tempting to regard the Hamburg and Ahrensburg cultures [see A. Rust, p. 316] as their westernmost Late Paleolithic offshoots, without thereby dismissing the entire ice-hunting culture as being so young.

Undoubtedly, the facts contributed by the various branches of knowledge—and to be utilized in addressing the question of the origin of the advanced hunter cultures—are often ambiguous and allow for multiple explanations. However, if one endeavors to form a picture that unifies the individual facts as consistently as possible, everything points to a unified origin of advanced hunting culture in the vast region between the Urals, the Caspian Sea, and the Tien Shan-Altai mountain range, from which it spread to all continents.

IV. OUTLINE OF ADVANCED HUNTER-GATHERER CULTURE

The nature of advanced hunting has been far less thoroughly studied and elucidated than is the case, for example, with the basic hunter-gatherer cultures. Furthermore, the diversity of advanced hunting cultures that emerged in different regions and at different times suggests from the outset a complexity that would actually require a separate treatment of each individual group—a task that would, however, exceed the scope of this sketchy outline.

1. ERGOLOGY AND ECONOMY

Given the various climate zones and environmental types within which the advanced hunter-gatherer cultures developed, a great diversity in the realm of material culture—especially with regard to food supply—is hardly surprising. A common underlying feature, however, is the marked intensification of men's hunting activities, as well as the high degree of specialization, which is evident not only in the types of hunting methods and weapons but also in the particular focus on specific animal species. Among the widespread hunting methods found in both the northern and southern zones of advanced hunting cultures, the first to mention is stalking game while wearing animal disguises—a technique used, for example, by North American tribes to approach deer or by the Bushmen to approach the elusive and swift ostrich, in order to kill it at close range with an arrow. In the circumpolar cultural region, reindeer are herded into large funnel-shaped enclosures that usually open onto bodies of water, where the animals are then shot, speared, or clubbed at close range, often from boats. Similar practices are also known in the south, in some cases in the form of the Lapp or net drive hunt. Finally, as a practice particularly common in the Euro-African region, the chase hunt should be mentioned, in which a hunter relentlessly pursues the game using special running sandals and repeatedly flushes it out until it finally falls to him, completely exhausted. However , the inventive spirit of these hunters is most evident in their ingeniously devised trap systems *[see also F. Eppel, p. 366]*. The most important are those types that exploit the gravitational force or the momentum of small poles bent toward the ground (swinging gallows traps). Furthermore, the use of poison plays a role, involving not only poisoned weapons but also the poisoning of water sources or, as is the case with the Bushmen,

a type of "poison trap" in the form of inserting poisoned arrows into the ground or, for example, into an ostrich nest.

Hunting, incidentally, is—as it was in early cultures—exclusively a male activity *[see W. Schmidt, p. 418]*. Women and children are directly and practically involved only in driven hunts (the role of women in hunting rituals and the specific rules of conduct required of them to ensure the hunt's success are a matter in themselves). Their task remains the gathering of plant-based food and small animals, such as snails, larvae, etc. The proportion of plant-based food varies depending on environmental conditions and is naturally higher in the south than in the north. However, this female contribution to the economy could not be further expanded compared to the hunter-gatherer stage as long as the transition to production had not been made *[cf. W. Schmidt, p. 388]*, and thus, in contrast to the intensification of hunting—which remained the man's exclusive domain—female activity remained limited to its traditional scope. Although a plant-based diet continued to be an essential factor in nutrition, with the increase in male activity in food procurement, the male element also came so strongly to the forefront of the entire "cultural style" that it is indeed justified to speak simply of a "higher hunting culture" rather than a "higher hunter-gatherer culture" that emphasizes male dominance.

Depending on the types of game and the abundance of game in the various ecological zones that served as the setting for this higher hunting culture, the nomadic lifestyle of the hunter-gatherer stage either intensified or diminished. The preference for hunting game that undertook major seasonal migrations, such as the reindeer, could—insofar as it was hunted year-round—force people into an extremely nomadic existence. In areas rich in year-round game, on the other hand, true sedentariness emerged. Both factors naturally had a corresponding effect on house and hut construction and settlement patterns. In the earlier stages of advanced hunting, e.g., in the Euro-African hunter culture, the foraging beehive or dome hut was still common *[see W. Schmidt, p. 429]*. Among the highly nomadic groups of the northern zone, it is partly replaced by the easily transportable and movable dome or conical tent *[see J. Imbelloni, p. 191]*. A variation of the dome hut adapted to specific conditions is the Eskimos' snow igloo. Semi-subterranean winter dwellings are also found in colder regions. Finally, in areas with a more sedentary hunter-gatherer or fishing culture, the hut evolves into a house with distinct walls and a roof, particularly into

round conical-roofed house. It is interesting to observe the contrast between easily transportable tent dwellings and residential structures designed for long-term stays, even in the Upper Paleolithic, in terms of their dependence on the economic system *[cf. A. Rust, p. 312 ff.]*.

The technical advances evident in the construction of huts, tents, and houses are even more pronounced in the manufacture of weapons and tools. They are so clearly evident in prehistoric finds [cf. *A. Rust, p. 289*] that a more detailed ethnographic description is likely unnecessary. Here, however, they can also be observed in perishable materials that have not been preserved in the archaeological record. It should simply be noted that technical refinement, for its part, is also closely linked to hunting. Ranged weapons take on much greater significance than among hunter-gatherers; a contrast that is also particularly evident in archaeological sources where the basic cultures have not yet been influenced or permeated by elements of higher culture. Although archery is common today among numerous hunter-gatherer peoples, it is likely an invention of more advanced hunting societies. As for specific details, attention should be drawn to the serrated points, some of which are mounted as harpoon heads detachable from the shaft and are used in the northern zone particularly for fishing and hunting marine animals, but also for other game [cf. *A. Rust, p. 291*; *J. G. D. Clark, p. 328*]. A similar type of weapon is the two-part spear or arrowhead, which occurs particularly in the Western European Upper Paleolithic and in the Euro-African hunter-gatherer culture.

Weapons and tools are often beautifully and meticulously decorated; indeed, jewelry—which played hardly any role in the basic hunter-gatherer cultures—experiences its first and astonishing flowering here. Necklaces, pendants, earrings, arm and leg rings, and bands are represented in a rich variety of forms and made from all manner of raw materials. In many cases, they also have magical or ritual significance, such as the disc-shaped breast ornaments of some groups of South Pacific islanders, which represent the sun. Above all, however, body painting also plays a major role, with the color red in particular being popular among the southern hunter-gatherer peoples, the Native Americans *[Redskins: cf. J. Imbelloni, p. 199]*, and in prehistoric Western and Central *Europe [see A. Rust, p. 307]*. For example, Australians undertake long journeys to obtain the coveted red ochre.

It is impossible here to even list the various forms of clothing, which, of course, depend largely on the climate. The covering of the genitals

is, however, almost always present. The Euro-African hunters are, however, usually depicted naked in the rock paintings, just as the absence of clothing can also be observed among some Australian tribes. The hunters of the northern zone, on the other hand, wear leg coverings and sleeved tunics made of furs or leather, often accompanied by shoes or boots of the same material; in snowshoe cultures, for example, the soleless moccasin *[cf. J. Imbelloni, p. 191]*. But the love of ornamentation also manifests itself in clothing through the abundant use of embroidery and the sewing on of decorations.

The expansion of ergology and the application of specialized techniques have already led to a division of labor. However, this is by no means limited to individuals within individual groups; there are also differences between individual local groups and tribes, some of which are due to the availability of specific raw materials. An exchange of goods—both raw materials and finished products—is developing, often taking place via established trade routes, which in turn—as can be observed in Australia—can pave the way for other cultural elements, including magical and religious ones; means of transportation are available only to a limited extent. In the north, however, the ice-hunting culture already uses the sled, which is usually pulled by dogs. In the snowshoe culture, which is adapted to movement in deep snow, it is replaced by a pair of highly curved boards, the toboggan. The ice-hunting culture also includes the open fur boat, the umiak [see J. G. D. Clark, p. 339], to which the Eskimos add the kayak, and which gives way to the lightweight bark boat in the snowshoe culture.

2. SOCIETY

The nuclear family continues to form the basis of society. However, the man's economic significance grants him greater dominance over the woman in all areas of life than was the case in hunter-gatherer cultures. Thus, patrilineality—which is only faintly indicated in the basic culture *[see W. Schmidt, p. 389]*— becomes fully developed, especially within the "totemic cultural sphere." Marriage continues to take place between members of different local groups, but exogamy takes on a new and more specific meaning, because it is now often only between very specific such groups that marriage is permitted. As a result, these groups enter into a closer relationship, which may well be seen as one of the roots of the formation of larger associations extending beyond the old local group. Such associations also emerge where the local group is unable to perform certain tasks

, e.g., during large-scale driven hunts or in war. Whereas in the basic culture the beginnings of the development of a chieftain's office were only slight and limited to the local group [cf. W. Schmidt, p. 403], this now comes more strongly to the fore, especially where the chieftain is also a priest or sorcerer. A "supreme chieftaincy" binding on the higher unit comprising several local groups can be observed in the Arctic American hunter cultures in the form of a temporary institution lasting a hunting season or the duration of a military campaign. Among North American tribes, the office of a "war chief" is established alongside that of a "peace chief." Such arrangements, however, constitute an exception within the overall picture of the higher hunter cultures, just as a chieftaincy serving as a permanent office is otherwise hardly found. It must be left to future studies to clarify to what extent the greater significance of war compared to the basic cultures—particularly among North American tribes and those of the "totemic cultural sphere"—as well as the more prominent role of supreme chiefs, can be attributed to more recent influences. In any case, a "central authority" seems to be reserved for special occasions and conditions and is, on the whole, quite rare. In the Central Australian region, the assembly of the individual clan chiefs is of some significance, and where there is a chief for several clans, he usually plays a role similar to that of a primus inter pares, just as in the basic culture a particularly respected man does in the council of elders or family heads [cf. W. Schmidt, p. 403]. It is striking that, particularly among groups in impoverished environments (e.g., among Eskimos and Bushmen), the old social order of hunter-gatherers is still found in almost its pure form. This suggests that larger units that once existed here may have dissolved under economic pressure to revert to smaller units. A tradition—often dismissed as implausible—speaks of chieftains with a greater sphere of influence among the Bushmen in earlier times. The groups continue to act as masters and owners of the hunting grounds [see W. Schmidt, p. 405]; however, particularly where they join together for large-scale hunts—for example, among the reindeer and bison hunters on the Mackenzie—the larger group also possesses a correspondingly expanded territory, which is already the case to a lesser extent among the Bushmen. Moreover, the principle still holds that private property arises from the labor associated with the production and use of objects [see W. Schmidt, p. 460]. The

exogamous local groups in the "totemic cultural sphere" have the character of totemic clans; that is, their members believe they are descended from a specific totem—usually an animal, less frequently a plant or some other object—or at least that their mythical progenitor had a close relationship with such a totemic animal, for example, in that it was his friend and helper. The entire group then maintains a special relationship with this totem, which can manifest itself, among other things, in the prohibition against killing or eating a totem animal. In addition to this relatively simple and early form of "social totemism," there are also more complex variants in which various totems are represented within a local group, but which then extend across multiple local groups and can, to a certain extent, unite individual clan members—even those from hostile groups—or serve as a strengthening bond in the cohesion of larger units (as in the confederation of Iroquois tribes, which, however, belongs to a more recent cultural layer). The situation becomes even more complex when family totems are present or when tribes are divided into two halves or marriage classes. These social forms, however, are based on the influence of other cultures, all of which are agricultural and matrilineal. In general, clan totemism is possible only under specific conditions, including, among other things, a considerable degree of sedentariness, and it is remarkable—and gives pause for thought regarding its origins—that it appears primarily in the contact zone with agricultural cultures (Baumann 1938).

Among southern hunter-gatherers, and especially within the "totemic circle," the role of the man in procreation is also more strongly emphasized. Physical procreative power is emphasized, and the admission of young men into the community of men and full-fledged hunters takes on a stronger sexual emphasis compared to the socio-ethical character of initiation among hunter-gatherers *[cf. W. Schmidt, p. 463]*. The greater value thus placed on coming of age —and the resulting emphasis on age stratification—leads to the formation of age groups, which, for example, in the South Seas is reflected in the fact that unmarried young men live together in a bachelor's house.

3. INTELLECTUAL LIFE

Just as the economy and society of the advanced hunters are dominated by hunting, so too—and perhaps to an even greater extent—is their intellectual life, which is entirely centered on hunting and its object, game,

is directed toward. Much more so than in, say, primitive cultures, the focus of thought and feeling in advanced hunter-gatherer societies is the constant practical and philosophical engagement with the animal as the primary life partner. This leads to a conception of the human-animal relationship as an extremely real unity of being—that is, to a belief in the unity of all animal life and the interchangeability of human and animal forms of existence. Herein we must see the spiritual foundation of a wealth of concrete manifestations of a cultic-religious nature—which are yet to be outlined—that also form the nucleus of "clan totemism," understood in purely sociological terms, and which (due to their greater antiquity relative to the latter) are referred to as "protototemism" (Baumann 1938) or (due to its religious content, in contrast to the former) as "cult totemism" (Petri 1950).

According to recent studies (Baumann 1938), individual totemism is regarded as the oldest form of totemism; it has been preserved particularly among the North American Plains Indians and finds expression in the belief in a personal guardian spirit that consistently takes the form of an animal. In connection with this, acts of self-mortification and fasting often induce states in which an experience transcending everyday life is sought. This usually manifests as the appearance of an animal—namely, the guardian spirit—and becomes a defining factor for the individual even in daily life.

However, protototemic concepts can also extend to several people or a group; the decisive factor is simply that—in contrast to clan totemism—they retain their ritual-religious form and that this relationship does not give rise to a system of interconnected human groups. The degree to which a totemic complex is closer to or farther from its living, cultic-religious origin or from its purely social, fossilized form can serve as a measure of the relative age of such phenomena.

Proto- or cult totemism manifests itself in ritual veneration, in the belief in rebirth as an animal, in animals as helpers, and in the latter case also as animal helper spirits of sorcerers. Among the customs arising from this worldview, animal pantomimes and erotic animal dances are particularly noteworthy, as well as numerous animal procreation rites. For example, the buffalo dance of some Native American tribes—to cite a more widely known example—is necessary to ensure the reproduction and prosperity of the bison herds, which form the basis of these peoples' livelihoods. The appeasement of the animal or a corresponding animal-shaped higher being after its killing, and the burial of animals

are further characteristic practices of this kind. Above all, however, this worldview also influences the conception of God. The ancient Supreme Being of the primordial cultures is often—in accordance with the hunter-protototemistic conception—replaced by the figure of the "Lord of the Animals" or a "wild and bush spirit," whose nature and function are extremely diverse (e.g., among the Bushmen, the corresponding group of African Pygmies, Arctic peoples—especially the Samoyeds—and Algonquin tribes). The spirit of the game and the bush, whose form is often equated with that of an animal itself, is both the lord and often the progenitor of the animals and the hunter, granting or withholding game. He is the ruler of the hunting grounds, the hunter's helper, who shows him the game and guides his arrow. He is often accompanied by other animals; he makes his presence known through the humming of the "swirlwood"; he possesses magical tools and bestows them upon the hunter—for example, the so-called "Bushman's revolver," a miniature bow imbued with magical power; he must also be appeased when an animal of his kind is killed. Closely related to this in Africa is a semi-spiritual "force of vengeance" that emanates particularly from animals, game spirits, and bush spirits, and avenges the death of an animal killed in the hunt—as well as that of a warrior killed in battle—on those responsible. The equivalence expressed here between game and a fallen warrior is significant; however, it appears that such beliefs and reconciliation ceremonies originated in the realm of hunting and were later extended to war rites. Of particular interest are the connections to the initiation of young men into the circle of men who are fully mature in terms of sexuality and hunting ability, for which the killing of one's first game animal is often a prerequisite. It is precisely this power of vengeance, however, that is particularly dangerous, and numerous rites of passage are dedicated to neutralizing it. From the Mahalbi legends, it can be inferred that after the youths had painted animal figures with blood in a cave, they left the place walking backward on their heels as protection against the dangerous gaze of the animal [cf. F. Eppel, p. 363].

Naturalistic rock art is particularly well-developed in the southern hunting region, yet there are also occurrences of rock art in the north—extending from northern Scandinavia through Karelia and Western Siberia to Inner Asia—which, for the most part, belong to more recent cultural phases; however, they also depict subarctic fauna, various hunting methods, skiers, and animal mask dances, and may therefore be attributed to a hunting culture. However, their close connection to one of the archaeologically and ethnologically documented cultural layers is quite

difficult. Regarding the details of the imagery in the southern zone, it should be noted once again that in Africa, myths of the bush spirit are occasionally depicted, and Australian paintings frequently feature totemic concepts and, at least in part, depictions of totemic heroes. Even the Upper Paleolithic cave paintings of Western Europe *[cf. F. Eppel, p. 366]*, which are undoubtedly a form of "ritual art" devoted primarily to the depiction of the "animal in itself," but which also depict humans wearing animal masks, can likely be understood only against the backdrop of such a conceptual world. It reveals to us, beyond the general numinous *[cf. H. Sedlmayr, p. 347]*, its characteristic contents and forms, which lie at the root of the oldest visual art. This striking cultural phenomenon—a magnificent artistic flowering that was still absent in hunter-gatherer societies—must be viewed in parallel with, and likely also in an intrinsic connection to, the strong tendency among advanced hunters—especially those of the southern zone—to visualize and personify the supernatural. Moreover, given the diversity of animal species depicted in a single location—for which no prohibitions against killing or eating them can be demonstrated—their representations can be explained more by the even more vivid form of cult or protototemism than by rigid clan totemism, a fact that should be noted as a secondary indication of the chronological relationships. Furthermore, other art forms, such as dance and music, also experience a strong flourishing in close connection with the blossoming of cultic and magical rites, and myth-making also reaches a rich and abundant scale.

It hardly needs to be emphasized that within individual groups there are many variations and deviations from the basic features outlined here. For example, in Africa, felids—especially the leopard—are at the center of the protototemic worldview, whereas in the north it is the bear, whose veneration is linked to highly ceremonial bear festivals and rites of reconciliation [cf. F. Eppel, p. 363], for which some peoples raise young bears specifically for this purpose. Among reindeer hunters, the reindeer plays a correspondingly prominent role, especially as a sacrificial animal in offerings to the Supreme Being. The forms vary greatly. Among other things, the animal's skull or the hide—with the head and hooves—is hung on a pole or tree or placed on a small platform; sometimes long bones are also included [see A. Rust, p. 309]. Particularly interesting, due to their prehistoric parallels, are certain customs of the Samoyeds—who are in the process of transitioning to pastoralism but still retain a strong hunting heritage—in which a sacrifice of a young

reindeer is set up in the manner described as an offering to the water spirit at the edge of a body of water, or the hide of a sacrificial animal, with its head and hooves still attached, is submerged in the water. In other ceremonies, such hides and skulls are hung over tent poles, the central pole of which often bears a crude, human-like carving representing the tree spirit. The offerings are presented to the Supreme Being, its various manifestations, or to a fertility-bestowing Earth Mother and tribal ancestress, who also possesses cult images *[cf. the prehistoric counterpart from the East European-Siberian region: F. Eppel, p. 359, A. Rust, p. 308]*, and other manifestations of the Supreme Being, such as the tree or water spirit. However, the protototemic ideas evident in animal reconciliation rites and other ritual acts seem, on the whole, to play a lesser role in the circumpolar cultural world. The dominant concept of God is still the Supreme Being of the primary cultures, though even here it is frequently linked to the notion of a tribal ancestor or the spirit of the wild, which often appears as a helper or mediator between the Supreme Deity and humankind. Future research may one day be able to better identify and elucidate such protototemic traits in the northern zone as well.

Conversely, in the southern circle of totemic hunting cultures, the Supreme Being—which is still clearly evident in Australia—is in some places supplanted by a number of solar mythological concepts (though this is also the case, for example, among the Samoyeds, the Golden, and the Yukagirs), as well as by a profusely proliferating magical being, particularly under the influence of agricultural traditions.

It may also be worth noting here the profound difference between religion and magic, which is manifested in the fact that the latter—in contrast to a genuinely religious attitude, which submits to the will of the deity and seeks to influence it only through prayer and rites—seeks to exert coercion in a supernatural manner. The fact that this distinction has often gone unrecognized is due in large part to the fact that, in practice, the two are frequently closely intertwined. According to recent studies by Jensen (1950), magical practices are in many cases merely ritual acts that have lost their meaning or are misunderstood; for this reason, the term “magic” should be restricted to those phenomena in which people attempt to influence the course of reality through acts of mental concentration. In doing so, such “genuine” forms of magic draw upon the content of a worldview based primarily on religious knowledge—for example, in the sense that the shaman receives magical power or a magical agent from a deity, to whom he may have to undertake a journey. The ancient and still widespread view that religion arose from magic cannot be sustained, and the secondary nature of magic—which can be inferred from its reliance on a religious worldview—also seems to find historical confirmation in its lesser significance in the basic culture compared to the more advanced hunter-gatherer cultures [cf. W. Schmidt, p. 469].

It is not uncommon for the sorcerer to occupy a special and prominent position, and where this crystallizes into a permanent office, one may see in it—alongside the development of chieftaincy and the specialization of trades—a further root of class-based social organization.

Although one must fundamentally adhere to the principle that all humans share a similar basic psychological makeup [cf. *W. Schmidt, p. 385*], one must nevertheless take into account that certain ideological aspects of a culture have also shaped its adherents psychologically and intellectually. The profound impact of the cultural picture outlined only in broad strokes above must certainly be taken into account when assessing the psychological characteristics of the advanced hunter societies. The heightened specialized skills, technical progress, and increased mastery of game as part of the environment will likely have brought about a general elevation in the quality of life and a sense of superiority, which may have found expression in these cultures' stronger inclination to actively influence higher powers through magic; unlike in the hunter-gatherer stage, these powers are depicted and personified to a considerable extent. However, not even the first steps have been taken in researching these questions, and a vast field for future work in ethnic psychology lies open here.

V. ADVANCED HUNTING CULTURES AND PRODUCTIVE CULTURES

While the picture of advanced hunting cultures clearly stands out from the basic hunter-gatherer culture described at length by W. Schmidt, it can only be fully grasped when contrasted with the other side, namely the food-producing cultures, which, due to the diverse interconnections of their present-day representatives with the advanced civilizations of the Orient, are to be included in the second volume of *Historia Mundi*. It will then become apparent that, given their overall structure, their origin in the advanced hunter-gatherer societies of the southern Old World—which are richly imbued with (proto-)totemic ideas—or even in the "(clan-)totemic cultural sphere" is extremely unlikely; the Plains Indians can be ruled out for geographical reasons alone. Rather, their sources must be sought in cultures that exhibit such "totemic" traits to a lesser degree, that is, in primitive cultures or at least those that are still quite close to them.

The very fact that among pastoral herders the "Supreme Being" again appears to us in a surprisingly pure form suggests that its roots lie in a culture that has preserved such a concept of God from the primitive cultures, as was the case in the northern hunter-gatherer cultures, which were therefore granted an intermediate position in the system of economic and cultural stages. In addition, however, the "totemic" suggest most strongly the existence of an intermediate group, such as that found in the North Asian cultures—particularly those of the snowshoe stage—whose hunter-totemic ideology includes animal reconciliation rites, animal festivals, the concept of the spirit of the game, and so on. Even for the

ice-hunting culture, the dog was mentioned as a draft animal; however, this does not mean much, since dogs are found almost everywhere on earth today, even as hunting aids among the most primitive hunter-gatherers. Nevertheless, there is also early archaeological evidence for them *[cf. J. G. D. Clark, p. 330]*. However, keeping dogs and raising young bears for ritual purposes does not yet constitute a step toward herd livestock farming. While both hunting and livestock-raising cultures are centered on animals, the former focuses on the individual animal, while the latter focuses on the herd. Such a tendency toward the herd as a whole is also found among those hunter-gatherer peoples who, through specialization in the seasonally migrating reindeer, had already developed a relationship with the large herd and adopted a highly nomadic way of life. Here, numerous researchers seek the point at which a hunter-gatherer way of life transitions into a pastoral one.

Far more difficult is the problem of the origins of agriculture, whose birthplace may well be found in South Asia. None of the cultures still in existence is entirely satisfactory as the source of agriculture. Perhaps, however, the Eastern European-Siberian hunter-gatherer cultural circle—which can only be understood in prehistoric terms—offers a clue to the solution, insofar as it exhibits not only the extensive sedentariness that is an indispensable prerequisite for the development of crop cultivation but also other elements that are strongly evident in agricultural societies, such as a particular emphasis on the feminine element, a preference for sculpture and ornamentation, and the ritual treatment of the human skull. Perhaps a group from this circle that migrated further south played a role in the emergence of agriculture similar to that played by the reindeer hunters of the north in the development of livestock husbandry.

Thus, the southern, more advanced hunter cultures seem to have played a relatively isolated role in contrast to the broad base of hunter-gatherer society and its northern developments. And yet, the elements of ergological and artisanal refinement and specialization that were particularly well-developed among them are likely to have regained significance elsewhere. In their expansion from North and Central Asia on the one hand, and South Asia on the other, toward Africa, the paths of dissemination of pastoral and agricultural cultures overlap, giving rise to diverse interactions and ultimately a fusion in a region that encompasses the fertile riverine landscapes of Egypt and Mesopotamia and the adjacent highlands with wild plants suitable for cultivation. It is here that we also encounter the oldest archaeologically documented cultures with an agrarian economic system, that is, a combination of large-scale livestock husbandry and crop cultivation [see J. G. D. Clark, p. 324 ff.]. However, it is also here that the first urbanized advanced civilizations soon emerged, with their rich development of craftsmanship and commercial specialization, which—as we have seen—have their roots in advanced hunting. Of course, herders and farmers may also have brought these skills with them from their predecessor cultures. There are, however, good reasons to assume that, beyond this, southern hunting cultures also played a role here once again, contributing to the emergence of this aspect of urban advanced civilizations and thus also participating in the foundation of the highest forms of culture.

APPENDIX

REFERENCES

J. KÄLIN, THE OLDEST HUMAN REMAINS AND THEIR INTERPRETATION IN TERMS OF TRIBAL HISTORY

(1) PLESSNER, H., *The Stages of the Organic and Man*. Berlin 1928.
(2) KÖHLER, W., Intelligence Tests on Anthropoids . *Treatises of the Berlin Academy of Sciences,* Physical-Mathematical Class, 1917–1918.
(3) YERKES, R. M., *The Mental Life of Monkeys and Apes*. **Behavior Monographs*, 1916.
(4) KELLOG, W. N., and KELLOG, L. A., **The Ape and the Child*. New York, 1933.
(5) PORTMANN, A., *Biology and the New Concept of Man*. Bern, 1941/42.
(6) BOLK, L., *The Problem of Human Becoming*. Jena, 1926.
(7) SCHULTZ, A. H., "Fetal Growth of Man and Other Primates ." *Quarterly Review of Biology* I, 1926.
(8) ABEL, O., *The Place of Man Among the Vertebrates*. Jena, 1931.
(9) KLAATSCH, H., "The Place of Man in the Natural World," in: *The Theory of Evolution*: Twelve Lectures for the General Public, etc. Jena, 1911.
(10) MOLLISON, T.H., The Body Proportions of Primates. *Morph. Jahrb.* XLII, 1910.
(11) GREGORY W. K., "How Close Is the Relationship Between Humans and the Chimpanzee-Gorilla Lineage?" *Quarterly Rev. of Biology* II, 1927.
(12) MORTON D. J., The Evolution of the Human Foot. *Am. Journ. Phys. Anthr.* VII, 1922 and 1924.
(13) KÄLIN J., A Comparison of the Human Foot and the Anthropoid Foot, Especially That of the Mountain Gorilla (Gorilla beringei Matschie). *Comptes Rendus du 13e Congrès International de Zoologie 1948*, Paris 1949.
(14) PIVETEAU, J., "The Organic Conditions of the Human Phenomenon." **L'Anthropologie** LII, 1948.
(15) WEIDENREICH F., The Special Form of the Human Skull as an Adaptation to Upright Gait. *Zeitschr. f. Morph. u. Anthrop.* XXIV, 1924.
(16) DABELOW A., On Correlations in the Phylogenetic Development of Skull Shape. *Morph. Jahrb.* LXIII and LXVII, 1929 and 1931.
(17) Roux W, Self-Regulation. *Nova Acta, Proceedings of the Imperial Leopold-Carol Academy of Natural Sciences,* Series C, 1915.
(18) SIMPSON, G. G., "Criteria for Genera, Species, and Subspecies in Zoology and Paleontology." *Annals of the New York Academy of Sciences,* 1943.
(19) KÄLIN J., "On the Problem of Human Phylogenetic History." **Experientia** II, 1946.
(20) PORTMANN, A., Ontogenesis and the Problem of Morphological Significance. *Revue Suisse de Zoologie* II, 1942.
(21) WIRZ K., Studies on Cerebralization: On the Quantitative Determination of Hierarchy in Mammals. **Acta Anatomica* IX, 1950.
(22) DUBOIS E., On the Relationship Between Brain Weight and Body Size in Mammals. *Bull. Soc. Anthr. Paris*, Ser. 4, VIII, 1897.
(23) BRUMMELKAMP R., Cranial Capacity and Body Size Among Different Human Races and Population Groups. *Acta Neerl. Morph. Norm. et Path.* II, 1939.
(24) ANTHONY R., An Attempt to Find an Approximate Anatomical Expression of the

degree of cerebral organization other than brain weight compared to body weight. *Bull. Soc. Anthrop. Paris*, Ser. 8, IX, 1938.
(25) PORTMANN A., Cerebral Indices in Humans. *Revue Suisse de Zoologie*, LV, 1948.
(26) Pocock R. I., The Fauna of British India, including Ceylon and Burma. *Mammalia* I, 1939–41.
(27) SIMPSON G. G., The Principles of Classification and a Classification of Mammals. *Bull. of the Am. Museum of Natural History* LXXXV, 1945.
(28) MIVART, S. G., "Notes on the Crania and Dentition of the Lemuridae." *Proc. Zool. Soc. London*, 1864.
(29) MONTANDON G., *Prehistoric Man and Prehumans*. Paris 1943.
(30) REMANE A., Contributions to the Morphology of the Anthropoid Dentition. *Arch. Naturg.* LXXXVII, Section A, 1921.
(31) NAEF A., Notes on the Morphology and Phylogeny of Vertebrates. 10. The Systematic Precursors of the Genus Homo and Their Stratigraphic Dating. *Biol. Centralbl.* XLIV, 1926.
(32) GREGORY W. K., "Paleontology of the Human Dentition: Ten Structural Stages in the Evolution of the Cheek Teeth." *Am. Journ. Phys. Anthr.* IX, 1926.
(33) Hopwood A. T., Miocene Primates from Kenya. *Journal of the Linnean Society of London, Zoology* XXXVIII, 1933.
(34) MAC INNES D. G., Notes on the East African Miocene Primates. *Journal of the East African and Uganda Natural History Society* XVII, 1943.
(35) LE GROS CLARK, W. E., and LEAKEY, L. S. B., *The Miocene Hominoidea of East Africa*. Fossil Mammals of Africa No. 1, British Museum (Natural History), London, 1951.
(36) HEBERER G., The Phylogenetic Place of Man. *Studium generale* IV, 1951.
(37) HEBERER G., *New Findings in the Study of Human Evolution*. Göttingen 1951.
(38) OAKLEY, K. P., and HOSKINS, C. R., "New Evidence on the Antiquity of Piltdown Man." **Nature** CLXV, March 1950.
(39) ZEUNER, F. E., **Dating the Past**. 2nd ed. London, 1950.
(40) BRAIDWOOD R. J., Geochronology and Geological Factors Relative to Man's Past; The Order of Incompleteness of the Archaeological Record; Artifacts; Terminology in Prehistory; The Interrelations of Core and Flake Tool Traditions in Europe, Articles Nos. 5, 11, 12, 14, and 15 in: *Human Origins: An Introductory Course in General Anthropology* (Selected Readings), Ser. II (2nd ed.), Chicago 1946.
(41) HENRI-MARTIN GERMAINE, Preliminary Note on a Tayacian Layer at the Prehistoric Site of Fontéchevade (Charente). *Soc. Préhist. Fr., Bull.* XLIII, 1946.

(42) Movius, H. L., "Old-World Paleolithic Archaeology." *Bulletin of the Geological Society of America*, September 1949.
(43) VAN RIET LOWE, C., "A Contribution to the Prehistory of Mozambique." *Moçambique-Documentario Trimestral*, 1943.
(44) CLARK, J. D., "Stone Age Sites in Northern Rhodesia and the Possibilities of Future Research." *Rhodes and Livingstone Museum, Occ. Papers* No. 1, 1939.
(45) JONES N., The Bembesi Industry. *National Museum of Southern Rhodesia, Occ. Pap.* No. 7, 1938.
(46) BREUIL H. and ZBYSZEWSKI G., Contribution to the Study of the Paleolithic Industries of Portugal and Their Relationship to Quaternary Geology. *Comunicações dos Serviços Geológicos de Portugal* XXIII, 1942.

(47) DUBOIS, E. , **Pithecanthropus erectus*, a human-like transitional form from Java*. Batavia, 1894.
(48) v. KÖNIGSWALD G. H. R., The Fossil Mammal Faunas of Java. *Proc. Ac. Wetensch.* XXXVIII, No. 2, 1935.
(49) MOHLER W. A., On the Stratigraphy of the Mammal-Bearing Strata of Java. *Experientia* II, 1946.
(50) Dubois, E., "On the Fossil Human Skull Recently Discovered in Java and Pithecanthropus erectus." **Man** XXXVII, 1937.
(51) SCHWALBE G., Studies on Pithecanthropus erectus Dubois. *Journal of Morphology and Anthropology* I, 1899.
(52) v. KÖNIGSWALD G. H. R., New Pithecanthropus Finds 1936–1938. *Wet. Meded. Dienst Mijnbouw Ned. Indië*, No. 28, 1940.
(53) INABA C. H., On the Pathology of the Cerebral Cortex in Idiocy. *Proceedings of the Neurological Institute, Vienna* XXIX, 1927.
(54) TAPPEINER F., The Capacity of Tyrolean Skulls. Z. *Ethnol.* XXXI, 1899.
(55) Dubois E., The Phylogenetic Enlargement of the Cerebrum; Autonomous Perfection of Animal Functions. **Biologia generalis** VI, 1930.
(56) WEIDENREICH, F., "Giant Early Man from Java and South China." *Anthr. Pap. Am. Mus. Natural History* XL, 1945.
(57) BLACK, D., "Tertiary Man in Asia." **Bull. of the Geol. Soc. China**, V, 3/4, 1927.
(58) TEILHARD DE CHARDIN, The Post-Villafranchian Interval in North China. *Bulletin of the Geological Society of China*, 1937.
(59) PEI W. C., An Attempted Correlation of Quaternary Geology, Paleontology, and Prehistory in Europe and China. *Occasional Papers of the Institute of Archaeology, University of London,* No. 2, 1939.
(60) Movius H. L., Early Man and Pleistocene Stratigraphy in Southern and Eastern Asia . *Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University* XIX, 1944.
(61) BOULE M., *Le Sinanthrope*. **L'Anthropologie** XXXIX, 1929.
(62) KÄLIN J., On the Systematics and Nomenclature of Fossil Hominids. *Bull. Swiss Soc. Anthrop. and Ethnol.* XXI, 1945.
(63) PEI W. C., "Notice of the Discovery of Quartz and Other Stone Artifacts in the Lower Pleistocene Hominid-Bearing Sediments of the Choukoutien Deposit." *Bull. Geol. Soc. China* XI, 1931/32.
(64) BREUIL H., Fire and the Stone and Bone Tool Industry at Choukoutien. *Bull. Geol. Soc. China* XI, 1931.
(65) BREUIL H., Fire and the Stone and Bone Tool Industry at the "Sinanthropus" Site in Choukoutien. *L'Anthropologie* XLII, 1932.
(66) SCHMIDT W., Ethnology and Prehistory Working Together to Shed Light on the Earliest History of Humanity. *Bulletin of the Natural History Society of Bern*, 1941.
(67) ADLOFF, P., "The Dentition of Humans and Anthropoids and the Problem of Descent ." *Journal of Morphological Anthropology* XXVI, 1927.
(68) WEIDENREICH, F., "The Dentition of Sinanthropus pekinensis: A Comparative Odontography of the Hominids." **Palaeontologica Sinica**, New Series D, No. 1, Whole Series No. 101, 1937.
(69) WEIDENREICH F., The Skull of Sinanthropus pekinensis: A Comparative Study on a Primitive Hominid Skull. *Palaeontologica Sinica*, New Series D, No. 10, Whole Series No. 127, 1943.

(70) OPPENOORTH W. F. F., Homo (Javanthropus) soloensis, a Pleistocene Human from Java. *Scientific Reports of the Mining Service of the Dutch East Indies*, No. 20, 1932.
(71) WEIDENREICH, F., **Apes, Giants, and Man**. Chicago, 1945.
(72) v. KOENIGSWALD G. H. R., Fossil Hominids from the Lower Pleistocene of Java. *Report of the Eighteenth Session of the International Geological Congress, Great Britain 1948*, Part IX, 1950.
(73) WEINERT, H., "On the New Pre- and Early-Human Finds from Africa, Java, China, and France." *Journal of Morphological Anthropology* XLII/1, 1951.
(74) v. KOENIGSWALD G. H. R., A Fossil Mammal Fauna Including Simia from Southern China. *Proc. Wetensch. Amsterdam*, XXXVIII, 1935.
(75) SCHOETENSACK, O., *"The Lower Jaw of Homo heidelbergensis from the Sands of Mauer near Heidelberg*." Leipzig, 1908.
(76) WEIDENREICH F., "The Mandibles of Sinanthropus pekinensis: A Comparative Study." **Palaeontologica Sinica**, Series D, VII/3, 1936.
(77) v. EICKSTEDT, E., *Racial Science and the History of Human Races*. Part One: Research on Humans. Stuttgart 1942.
(78) ALBRECHT, P., "Lower Jaw from La Naulette." *Korr. Bl. Dtsche. Ges. Anthr.* XIV, 1883.
(79) WALKHOFF, O., "New Studies on Human Chin Formation." *German Dental Journal,* Issue 22, 1911.
(80) WEIDENREICH, F., "The Human Child and Its Development." *Results of Anatomical Developmental History,* XXXI, 1934.
(81) TOLDT, C., "On the Anterior Segment of the Human Mandible with Regard to Its Anthropological Significance." *Bulletin of the Anthropological Society of Vienna*, XLV, 1915.
(82) BOLK L., The Development of the Human Chin. A Contribution to the History of the Development of the Lower Jaw. *Proceedings of the Royal Academy of Sciences of Amsterdam*, 2nd Section, XXIII, 1924.

(83) ADLOFF P., Critical Remarks on the Question of Growth Processes in the Lower Jaw During Tooth Eruption and Chin Formation . *German Journal of Dental, Oral, and Maxillofacial Medicine* VI, 1939.
(84) Bay R., *The jaws and teeth from a Neolithic stone coffin near Aesch (Canton of Baselland)*. (Manuscript.)
(85) BOULE, M., "The Fossil Man of La Chapelle-aux-Saints (Corrèze)." **L'Anthropologie** XIX, 1908.
(86) BERCKHEMER F., Remarks on H. Weinert's treatises "The Prehistoric Skull from Steinheim." *Proceedings of the Society for Physical Anthropology* VIII, 1937.
(87) SOERGEL W., *The Ice Age*. Jena 1938.
(88) MAC COWN T. C., and KEITH A., *The Stone Age of Mount Carmel II*: The Fossil Human Remains from the Levalloiso-Mousterian, II, Oxford 1939.
(89) DOBZHANSKY, Th., "On Species and Races of Living and Fossil Man." *Am. Journ. Phys. Anthr.*, New Series II, 1944.
(90) GIESELER, W., The Origin and Racial Classification of Humans I. *Publications of the German Natural History Society,* LVI (Old Series), 1935.
(91) HEBERER, G., "The Neanderthal Problem and the Origin of Modern Humans." *Jena Journal of Medicine and Natural Sciences,* LXXVII, 1944.
(92) HEBERER, G., "The Pre-Sapiens Problem." *Modern Biology*. *Festschrift for Hans Nachtsheim*. Berlin, 1950.

(93) SERGI, S., "The Neanderthal Skull from Monte Circeo." **Anthropological Bulletin** XVI, 1939.
(94) WEINERT H., Paleolithic Research in Italy. Results and Problems. *Journal of Morphological Anthropology* XLI, 1944.
(95) SMITH-WOODWARD A., "Note on the Piltdown Man (Eoanthropus dawsoni)." *Geol. Mag., Dec. V*, X, No. 592, 1913.
(96) SMITH-WOODWARD, A., *A Guide to the Fossil Remains of Man in the Department of Geology and Paleontology at the British Museum* (Nat. Hist.). 3rd ed., London 1922.
(97) RAMSTRÖM, M., On the Lower Jaw of the Piltdown "Eoanthropos" Find. *Proceedings of the Swedish Medical Society*, Stockholm 1916.
(98) WEINERT H., The Problem of the "Eoanthropus" from Piltdown. *Zeitschr. Morph. Anthropol.* XXXII, 1933.
(99) OAKLEY, K. P., and HOSKINS, C. R., "New Evidence on the Antiquity of Piltdown Man." **Nature** CLXV, 1950.
(100) The Swanscombe Committee of the Royal Anthropological Institute, "Report on the Swanscombe Skull." *Journal of the Royal Anthropological Institute of Great Britain and Ireland* LXVIII, 1938.
(101) MORANT G. M., "The Form of the Swanscombe Skull." *Journal of the Royal Anthropological Institute of Great Britain and Ireland* LXVIII, 1938.
(102) KEITH A., A Resurvey of the Anatomical Features of the Piltdown Skull with Some Observations on the Recently Discovered Swanscombe Skull. *Journal of Anatomy* LXXIII, 1938–39.
(103) VALLOIS H. V., "The Fontéchevade Fossil Man." *Am. Journ. Phys. Anthr.* New Series VII, 1949.
(104) Boswell P. G. H., "Human Remains from Kanam and Kanjera, Kenya Colony." **Nature** CXXXV, 1935.
(105) DEPÉRET CH., Prehistoric Excavations at the Denise Site, near Le Puy-en-Velay. *Comptes Rendus Séanc. de l'Acad. Sci. Paris*. CLXXXII, 1926.
(106) LE CROS CLARK, Observations on the Anatomy of the Fossil Australopithecinae. *Journal of Anatomy* LXXXI, 1947.
(107) WEIDENREICH F., The Human Brain in the Light of Phylogenetic Development. *The Scientific Monthly* LXVII, 1948.
(108) BROOM R. and SCHEPERS G. W. H., The South African Fossil Ape-Men: The Australopithecinae. *Transvaal Museum Memoir* No. 2, 1946.
(109) BROOM R., ROBINSON J. T., and SCHEPERS G. W. H., Sterkfontein Ape-Man Plesianthropus. *Transvaal Museum Memoir* No. 4, 1950.
(110) LE GROS CLARK W. E., "New Paleontological Evidence Bearing on the Evolution of the Hominoidea." *Quart. Journ. Geol. Soc. London* CV, March 1950.
(111) DART R. A., "The Predatory Implemental Technique of Australopithecus." *Am. Journ. Phys. Anthr.*, New Series VII, 1949.
(112) DART R. A., Innominate Fragments of Australopithecus prometheus. *Am. Journ. Phys. Anthr.*, New Series VII, 1949.

H. VALLOIS, HUMANS IN THE EARLY PALEOLITHIC AND MESOLITHIC PERIODS

ARAMBOURG C., BOULE M., VALLOIS H., VERNEAU R., Paleolithic Caves of Beni Ségoual (Algeria). *Arch. Inst. Paléont. Hum.* XIII, 1934.
BOULE M., VALLOIS H., The Fossil Man of Asselar. *Arch. Inst. Paléont. Hum.*, Mém. IX. Paris 1932.
BOULE, M., *Fossil Humans*. Paris, 1946.
COON, C. ST., **The Races of Europe**. New York, 1939.
v. EICKSTEDT E., *Racial Science and the History of Human Races*. Stuttgart 1934.
PÉQUART M. and ST. J., BOULE M., VALLOIS H., Téviec, a Mesolithic necropolis site in Morbihan. *Arch. Inst. Paléont. Hum.* Mém. XVIII, 1937.
VALLOIS, H., "Research on the Mesolithic Bones from Mugem." **L'Anthropologie** XL, 1930.
Vallois, H., Further Research on the Chancelade Skeleton. *L'Anthropologie* XLIX, 1941–46.
VERNEAU, R., *The Grimaldi Caves*. 3 vols. Monaco, 1906.
WEINERT H., *People of Prehistory*. Stuttgart 1947.

E. VON EICKSTEDT, THE BIODYNAMICS OF THE EUROPIDS

The Exodus of the Mediterraneans:

BATES, C., **The Eastern Libyans**. London, 1914.
CHILDE B., *The Danube in Prehistory*. Oxford 1929.
v. EICKSTEDT E., "People and Depictions of People in Stone Age Cave Art in France and Spain." *Zeitschrift für Morphologische Anthropologie* XLIV, 1952.
DE HOYOS SAINZ L., *Spanish Prehistoric Anthropology*. Madrid 1947.
v. WARTBURG, W.: *The Origins of the Romance Peoples*. Tübingen 1951.

The Blonde North:

BREITINGER, E., "On the Differential Diagnosis Between Nordic and Mediterranean Skulls." *Proceedings of the Society for Physical Anthropology* IX, 1938.
CAPELLE, W., *Ancient Germania*. Jena, 1929.
FÜRST, C. M., "On the Anthropology of the Prehistoric Greeks in Argolis." *Lund University Arsskrift* XXVI, 1930.
GÜNTHER H. F. K., *Racial Characteristics of the German People*. Munich 1939.
GÜNTHER H. F. K., *The Nordic Race Among the Indo-Europeans of Asia*. Munich 1934.
HERBERT H., *The Rise of the Celts*.
KERN F., *Genealogy and Physical Characteristics of the Germans*. Munich 1927.
MINNS, E. H., **Scythians and Greeks**. Cambridge, 1913.
PAUDLER, J., *The Light-Skinned Races*. Heidelberg, 1924.
PAUL, G., *The Racial and Territorial History of the German People*. Munich, 1935.
RETZIUS G., **Crania Suecica antiqua**. Stockholm 1900.
Rostovtzeff, M., **Iranians and Greeks**. Oxford, 1922.
SIEGLIN W., *The Blonde Hair of the Ancient Indo-European Peoples*. Munich 1935.

Mountain Belts and Brachycephalic Races:

BARTUCZ, L., "The History of Races in Hungary." *Journal of Racial Science* I, 1935.
FEIST, S., *"The Ethnology of the Jews."* Leipzig, 1925.
Fürst C. M., Anthropology of the Prehistoric Population of the Island of Cyprus. *Lund University Arsskrift* XXIX, 1933.
GERHARD K., New Studies in the Paleoanthropology of Central Europe. *Reports of the Roman-Germanic Commission* XXXIII, 1950.
HROŽNY, B., *The Earliest History of the Near East and India*. Prague, 1943.
JANKOWSKY W., "Were the Glockenbeck People of the Dinaric Race?" *Anthr. Anz.* VIII, 1931.
PEAKE H., *The Bronze Age and the Celtic World*. London 1922.
PERRET G., Cro-Magnon Types from the Neolithic to the Present. *Journal of Morphological Anthropology* **XXXVII**, 1938.
Scheidt, W., *The Races of the Late Stone Age in Europe*. Munich, 1924.
SCHWIDETZKY I., Studies on the Turanids. *Academic Society of the Sciences of Mainz.* Wiesbaden 1950.
UNGNAD, C., **Subartu**. Berlin, 1936.

The Forgotten East:

CZAPLICKA, M. A., **Aboriginal Siberia**. Oxford, 1914.
v. MEHRHARDT, G., *The Bronze Age on the Yenisei*. Vienna 1926.
NIEDERLE, L., "Historical Records on the Type of the Ancient Slavs." *Anthropologie* (Prague), 1929.
SCHWIDETZKY I., Racial Studies of the Ancient Slavs. *Journal of Racial Studies* VII, 1938.

The Oriental-Berber Pressure Belt:

v. EICKSTEDT, E., "Ethnobiological Problems of the Sahara." *Contributions to Colonial Research,* Conference Proceedings I, 1943.
FISHBERG M., *The Racial Characteristics of the Jews*. Munich 1913.
GAUTIER, E. F., **The Sahara**. Paris, 1928.
GÜTHLING, O., *The Histories of Herodotus*. Leipzig.
RODD, F., **People of the Veil**. London, 1926.
WÖLFEL D. J., The Main Problems of White Africa. *Arch. f. Anthr.* XXVII, 1942.

The Indo-Weddid Contrast:

CREDNER W, Hinterindien as a Region of Racial Migration for the Veddas. *Zeitschr. f. Rassenk.* XIII, 1943.
v. EICKSTEDT, E., "The Racial History of a Sinhalese Noble Family." *Arch. Rass. Ges. Biol.* XIX, 1927.
v. EICKSTEDT E., The Historical Position of the Weddas and the Early Settlement of Ceylon. *Ethnol. Studien* I, 1929.
v. EICKSTEDT E., The Racial History of India. *Journal of Morphological Anthropology* XXXII, 1933.
v. EICKSTEDT, E., Aryans and Nagas. *Festschr. Hermann Hirt I.* Heidelberg 1936.
GOETZ, H., *"Epochs of Indian Culture."* Leipzig, 1929.
GRIERSON G. A., **Linguistic Survey of India**. Calcutta 1927.
v. HEINE-GELDERN, R., "On the Racial and Prehistory of India." *Journal of Racial Science* III, 1946.

The Conquest of the South Seas:

BEST, E., **The Maori**. Wellington 1928.
BROWN, J. M., **Peoples and Problems of the Pacific**. London, 1927.
FORNANDER, S., **An Account of the Polynesian Race**. 1885.
FRIEDERICI G., Malayo-Polynesian Migrations. Lecture, *19th Geographical Congress*, Strasbourg 1914.
MÜHLMANN W. E., *State Formation and Amphictyonies in Polynesia*. Stuttgart 1938.
DE QUATREFAGES A., *The Polynesians*. Paris 1866.
THILENIUS, G., The Significance of Ocean Currents for the Settlement of Melanesia. *Yearbook of the Hamburg Scientific Institute*, 1906.

B. LUNDMAN, THE PEOPLE OF EUROPE TODAY

Overview Works:

BIASUTTI, R., *Races and Peoples of the Earth*. Turin, 1942.
COON C. S., *The Races of Europe*. New York 1939.
DENIKER J., *The Races and Peoples of the Earth*. 1900.
V. EICKSTEDT E., *Racial Science and the History of Human Races*. Stuttgart 1934.
RIPLEY W. C., *The Races of Europe*. 1909.

Further Reading:

BRYN H., *The Nordic Man*. Munich 1929.
BUNAK, V., Anthropological Types of Eastern Europe. *Journal of Morphological Anthropology* XXX, 1932.
v. EICKSTEDT, E., The Mediterraneans of Wales. *Journal of Racial Studies* I, 1935.
FIELD H., **Contributions to the Anthropology of the Soviet Union**. Washington 1948.
GÜNTHER H. F. K., *A Brief Study of the Races of Europe*. Munich 1925.
KERN, F., *Genealogy and Physical Characteristics of the Germans*. Munich 1927.
LUNDBORG, H. a. LINDERS, F. J., *The Racial Characters of the Swedish Nation*. Stockholm 1926.
LUNDMAN, B., *The Races and Ethnic Groups of the World*. Uppsala, 1943.
LUNDMAN, B., *An Outline of Human Racial Studies in Historical Times*. Copenhagen 1952.
MONTANDON, G., *The French Ethnic Group*. Paris, 1925.
MONTANDON, G., *Race—The Races*. Paris 1933.
NEUVILLE H., *"Species, Race, and Interracial Mixing in Anthropology."* Paris 1933.
SCHREINER, A., "Anthropological Local Studies in Norway." *Norske Vidensk. Akad.* I, 1930.
SERGI, G., *The Origin and Distribution of the Mediterranean Race*. Leipzig, 1897.
WENINGER, J., The Near Eastern Race. *Bulletin of the Geographical Society of Vienna*, LXIII, 1920.

E. VON EICKSTEDT, RACIAL TYPES AND TYPE DYNAMICS IN ASIA

Type and Distribution of the Mongoloids:

BIASSUTTI, R., "Asia," in: BIASSUTTI, **Races and Peoples of the Earth**. Turin, 1941.
BUXTON, G. L., **The Peoples of Asia**. London, 1925.

v. EICKSTEDT E., What Did the Huns Look Like? *Journal of Racial Science* XIII, 1942.
V. EICKSTEDT E., *Racial Dynamics of East Asia*. Berlin 1944.
GIUFFRIDA-RUGGERI V., *A Systematic Anthropology of Asia.* Calcutta 1921.
GROUSSET, R., *History of the Far East*. Paris 1929.

Sinides:

Beger, B., "The Racial Characteristics of the Tibetan." *Asia Report,* Vol. XXI.
v. EICKSTEDT, E., "In the Red River Delta and Among the Mountain Peoples of Upper Tonkin." *Journal of Racial Science,* Vol. I, 1939.
HABERER, K. A., *Skulls and Skeletal Remains from Beijing*. Jena, 1902.
HUARD P. and BIGOT A., The Indochinese. *Trav. Inst. Anat. Ec. Sup. Méd. Indochine* IV, 1938.
JOYCE, T. A., "Chinese Turkestan and the Pamirs." *Journal of the Royal Anthropological Institute,* LXI, 1926.
KUBO, T., "The Korean People." *China Medical Journal,* XXXI, 1917.
Liu Ch. H., The Races of China. *Journal of Racial Studies* VI, 1937.
SHIROKOGOROFF, M. S., *Anthropology of Northern China*. *Royal Asiatic Society, Vol.* II, 1923–25.
WAGENSEIL, F., Studies on the Chinese. *Journal of Morphological Anthropology* XXXII, 1933.

Paleomongoloids:

BAELZ, E., The Physical Characteristics of the Japanese. *Bulletin of the German Society for the Natural History of the Peoples of East Asia* III, IV, 1883/85.
v. EICKSTEDT, E., "In Burma and the Shan States." *Ethnol. Anz.* II, 1929.
HAGEN, B., *Head and Facial Types of East Asian and Melanesian Peoples*. Stuttgart, 1906.
KLENKE, W., Anthropology of Japanese Athletes . *Journal of Racial Science* VIII, 1938.
KOYA, Y., et al., The Hokuriku Japanese . *Racial Biological Studies of the Kanazawa Institute of Hygiene* IV, 1937.
KLEIWEG DE ZWAAN, J. P., *The Races of the Indian Archipelago. Amsterdam*, 1925.
KLEIWEG DE ZWAAN, J. P., *Bali and Lombok*. Leiden 1942.
MATSUMURA A., "The Japanese and Their Local Differences." *Japan. Journal of the Faculty of Science, Imperial University of Tokyo,* Vol. V, 1925.
RODENWALDT, E., *The Mestizos of Kisar*. Batavia, 1927.
STRATZ C. H., *Physical Characteristics of the Japanese*. Stuttgart 1902.

Siberians:

FINDEISEN, H., "On the Problem of the West Siberian Paleo-Asiatic and on the Origin of the Paleo-Asiatic Peoples in General." *Z. Ethnol.* LIX, 1927.
HILDÉN K., *Some Peoples in Central Asia*. Helsinki 1940.
Jochelson W., *Peoples of Asiatic Russia*, New York 1928.
MONTANDON G., Paleosiberian Craniology. *L'Anthropologie* XXXVI, 1926.

Pygmy subgroups:

v. EICKSTEDT, E., "The Negritos and the Negrito Problem." *Anthr. Anz.* VI, 1927.
v. EICKSTEDT E., The Negritos of the Andamans. *Anthr. Anz.* V, 1929.
v. EICKSTEDT E., Philippine Negrito Skeletons. *Journal of Morphological Anthropology* XXIX, 1931.

FISCHER, E., "On the Origin of the Pygmies." *Journal of Morphological Anthropology* XLII, 1951.
MARTIN, R., *The Inland Tribes of the Malay Peninsula.* Jena, 1905.
SCHEBESTA, P., and LEBZELTER, V., "Anthropological Measurements of the Sakai and Semang." *Anthropologie* (Prague) VI, 1928.

Melanides:

CIPRIANI L., Human Groups of the Curg. *Arch. Antrop. Etnol.* LXV, 1936.
DALTON E. T., **Descriptive Ethnology of Bengal**. Calcutta 1872.
v. EICKSTEDT, E., Anthropological Research in South India. *Anthr. Anz.* VI, 1929.
v. EICKSTEDT E., The Jungle Tribes of Northern India. *Anthr. Anz.* VII, 1931.
MAJUMDAR D. N., "The Hos of Kolhan." **Man in India** V, 1925.
SCHMIDT E., Contributions to the Anthropology of South India. *Arch. f. Anthr.* IX, 1910.

General Type Dynamics:

v. EICKSTEDT, E., *Racial Dynamics of East Asia.* Berlin 1944 (Lit.!).

Tungid Center:

ANDERSSON J. G., **Children of the Yellow Earth**. London 1934.
v. EICKSTEDT, E., "What Did the Huns Look Like? " *Journal of Racial Science* XIII, 1942.
McGOVERN, W. M., **The Early Empires of Central Asia**. New York, 1939.
GROUSSET, R., **The Empire of the Steppes**. Paris, 1939.
HUNTINGTON, E., **The Pulse of Asia**. London, 1907.
NELSON, N. C., *The Dune Dwellers of the Gobi*. **Natural History** XXVI, 1926.
OBRUTSCHEW, W. A., "The Distribution of Glacial Traces in Northern and Central Asia." *Geol. Rundsch.* XXI, 1930.

Sinider Block:

AUROUSSEAU L., The First Chinese Conquest of the Annamite Lands. *Bull. Ec. Franc. Extrême-Orient* XXIII, 1923.
BISHOP C. W., The Rise of Civilization in China with Reference to its Geographical Aspects. *Geogr. Rev.* 1932.
DAVIES H. R., *Yunnan, the Link between India and the Yangtze*. Cambridge.
v. EICKSTEDT E., The Anthropological Position of Hinterindien. *Zeitschr. f. Morph. Anthr.* XXXIV, 1934.
LI, CHI, **The Formation of the Chinese People**. Cambridge 1928.
TERRIEN DE LACOUPERIE, *The Languages of China before the Chinese*. London 1887.

Paleomongolian Expansion:

EBERHARD W., *Culture and Settlement of the Peripheral Peoples of China.* Leiden 1942.
v. EICKSTEDT E., "Siam and Laos, the Tai Problem, and the Chinoisants." *Journal of Racial Science* X, 1939.
v. EICKSTEDT E., "On the Origin and Type of the Miau Tribes in Western China." **Sinica** XVII, 1942.
v. HEINE-GELDERN H., "The Original Homeland and Earliest Migrations of the Austronesians." **Anthropos** XXVII, 1932.

D'HERVEY DE SAINT-DENYS, *Ethnography of Peoples Foreign to China*. Paris 1876–83.
RAMMING, M., *Handbook of Japan*. Berlin 1941.
PATTE E., Prehistoric Indochina. *Rev. Anthr.* XLVI, 1936.

Indomelanid Group:

v. EICKSTEDT E., Aryans and Nagas. *Hirth Festschrift*. Heidelberg 1936.
v. EICKSTEDT, E., *Racial Dynamics of East Asia*, VIII, 3, The Indian Dynamic. Berlin 1944.
IYENGAR P. T. S., *History of the Tamils*. Madras 1929.
SLATER G., *The Dravidian Element in Indian Culture*. London 1924.
VISVANATHA S. V., *Racial Synthesis in Hindu Culture*. London 1929.

Negrito Fragments:

v. EICKSTEDT E., The Extinction of the Negritos. *Arch. Rass. Ges. Biol.* XXI, 1928.
PORTMANN, H., **History of Our Relations with the Andamanese**. Calcutta, 1899.
SCHEBESTA P., *Among the Jungle Dwarfs of Malaya*. Leipzig 1927.
VANOVERBERGH, M., "Negritos of Northern Luzon." **Anthropos** XX, 1952 ff.

H. BAUMANN, THE RACES OF AFRICA

BAUMANN H., THURNWALD R., and WESTERMANN D., *The Ethnology of Africa*. Essen 1940.
v. EICKSTEDT, E., *Racial Science and the History of Human Races*. Stuttgart 1934.
v. EICKSTEDT, E., Ethnobiological Problems of the Sahara. *Contributions to Colonial Research,* Proceedings Vol. I, 1943.
GUSINDE, M., *The Congo Pygmies*. Halle, 1942.
GUSINDE, M., *"Jungle People of the Ituri."* Vienna, 1948.
LEAKEY, L. S. B., *Stone Age Africa*. Stuttgart, 1938.
MONTANDON, G., *Human Ontogenesis*. Paris, 1928.
POUTRIN, L., *The Cottes Mission in Southern Cameroon*. Paris, 1911.
SCHEBESTA P., *The Bambuti Pygmies of the Ituri*, Vol. I. Brussels 1938.
SCHULTZE-JENA, L., *From Namaland and the Kalahari*. Jena, 1907.
STRUCK B., Map of the Cranial Index in Central Africa. *Zeitschr. f. Ethnol.* LIV, 1922.
Suk V., "Negroes of Natal and Zululand." *American Journal of Physical Anthropology* X, 1927.
WEINERT, H., *People of Prehistory*. Stuttgart, 1947.
WENINGER, J., *100 West African Negroes*. Vienna, 1927.

S. ALCOBÉ, THE BIODYNAMICS OF AFRICAN HOMINIDS

ALCOBÉ S., The Eurafricanids and the Racial Composition of the Iberian Peninsula. *Z. Rassenk.* III, 1936.
ALCOBÉ S., The Physical Anthropology of the West Saharan Nomads. *Man XLVII*, 1947.
ALCOBÉ S. and PANYELLA A., Quantitative Study of Exogamy Among the Pamues (Fang) of Spanish Continental Guinea. *Arch. Inst. Est. Africanos* V, 1951, and *Atti XIV Congr. Int. Soziol.* II, 1951.

ALMAGRO, M., Prehistory of North Africa and the Spanish Sahara. *Publ. Inst. Est. Afric.*, Barcelona, 1946.
ARAMBOURG C., BOULE M., VALLOIS H., VERNEAU R., The Paleolithic Caves of Beni-Segoual (Algeria). *Arch. Inst. Paléont. Hum. Mem* XIII, 1934.
BAUMANN H. and **WESTERMANN D.**, *The Peoples and Civilizations of Africa*. Paris 1948.
BIASUTTI, R., "Remnants of Ancient Racial Elements in the Oases of the Sahara." *Z. Rassenk.* I, 1937.
CABOT-BRIGGS, L., Ossian Heads from Mechta-el-Arbi. *Proceedings of the Laboratory of Anthropology and Prehistoric Archaeology, Bardo Museum* IV, 1951.
COLLIGNON R., A Study of the General Ethnography of Tunisia. *Bull. of Geogr., Hist., and Descript.* Sci . I, 1887.
Coon C. S., Tribes of the Rif. *Harvard Afr. Stud.* IX, 1931.
CZEKANOWSKI J., The Anthropological and Ethnological Work of the Expedition of His Highness Duke Adolf Friedrich of Mecklenburg. *Z. Ethnol.* XLI, 1909.
v. EICKSTEDT E., *Racial Science and the History of Human Races*. Stuttgart 1934.
v. EICKSTEDT E., Ethnobiological Problems of the Sahara. *Contributions to Colonial Research,* Conference Proceedings I, 1943.
v. EICKSTEDT, E., "The Bearers of African Cultures." In *Bernatzik, H. A., *Africa: Handbook of Applied Ethnology* I* , Innsbruck 1947.
v. EICKSTEDT, E., "The Hamitic Problem." **Homo** I, 1949.
FISCHER, E., *"The Rehoboth Bastards and the Problem of Bastardization in Humans."* Jena, 1913.
FISCHER, E., "Have the Ancient Canarians Died Out?" *Z. Ethnol.* LXII, 1930.
FLEURE H. J., Drifts of Mankind in Africa and Europe. *Bantu Studies* IV, 1939.
GAUTIER E. F., *The Past of North Africa*. Paris 1942.
GRANDIDIER A. and G., *The Physical, Natural, and Political History of Madagascar*. Paris 1914.
GUSINDE M., *The People of the Ituri Jungle*. Vienna 1948.
HADDON A. C., *The Wanderings of Peoples*. Cambridge 1911.
HRDLIČKA, H., *The Natives of Kharga Oasis*. *Egypt. *Smithsonian Misc. Coll.** LIX, 1912.
JOHNSTON H., Ethnography of Africa. *Journal of the Royal Anthropological Institute* XLIII, 1913.
MONTANDON G., *Race, Races*. Paris 1933.
OLIVIER G., A Comparative Anthropological Study of the Main Tribes of the Yaoundé Region. *Bull. Soc. Et. Camerounaises* X, 1945.
PALES, L., and RASSIN DE SAINT PEREUSE, "The Distribution Map of Stature Among the Populations of the A.O.F." *Bull. Mém. Soc. Anthr. Paris* VII, 1946.
POUTRIN N., Observations among the Badschuni (Somaliland). *Z. Rassenk.* III, 1936.
Routil R., An Attempt at a Novel Typological Analysis of West African Blacks. *Anthr. Anz.* VIII, X, 1932–33.
SABATINI, A., Anthropology of the Tebu of Kufra. *Z. Rassenk.* III, 1936.
SERGI S., The Relics of the Garamantes. *Bulletin of the Italian Geographical Society* VII, 1936.
SELIGMAN C. G., The Physical Characteristics of the Nuba of Kordofan. *J. R. Anthr. Inst.* XL, 1910.
TREZENEM E., *Contribution to the Study of African Negroes. The Bateke Balali*. Paris 1939.
VALLOIS H. V., Anthropometric Studies on Some Black Groups in Cameroon. *Bull. Mém. Soc. Anthr. Paris* X, 1940.
VALLOIS H. V., The Badjoué of Southern Cameroon. *Bull. Mém. Soc. Anthr. Paris* I, 1950.
VAUFREY, R., Anthropological Findings from Mr. de Gironcourt's Mission to West Africa. *L'Anthrop.* XXVII, XXVIII, 1916–17.

VAUFREY R., The Prehistoric Climate in Europe and Northern Africa. *L'Anthr.* XLVI, 1936.
WEULE K., Migration of Peoples in Africa. *19th Geographical Congress,* Berlin 1915.

J. IMBELLONI, RACIAL TYPES AND BIODYNAMICS OF AMERICA

AMEGHINO F., *The Antiquity of Man in the La Plata Region*. La Plata 1915.
BIRKET-SMITH K., On the Origin of the Eskimos and Their Place in Circumpolar Cultural Development. *Anthropos* XXV, 1930.
CANALS, Mrs. S., *Prehistory of America*. Buenos Aires, 1950.
v. EICKSTEDT E., *Racial Science and the History of Human Races*. Stuttgart 1934.
v. EICKSTEDT, E., The First Settlement of the Americas. **Homo** II, 1951.
GIFFORD, E. W., "Californian Anthropometry." *Amer. Arch. Ethn.* XXII, 1926.
Handbook of South American Indians I–IV, Washington 1946–48.
Handbook of Indians North of Mexico. 2 vols., Washington 1907–10.
IMBELLONI, J., "Some Concrete Evidence of the Extracontinental Connections of the American Indians." *Bulletin of the Anthropological Society of Vienna* LVII, 1928.
IMBELLONI J., Fuéguides and Laguides. *Journal of Racial Studies* V, 1937.
IMBELLONI J., *The Early Settlement of the Americas*. Buenos Aires 1938.
IMBELLONI, J., "The Indigenous Peoples of America," in: BIASUTTI, **Races and Peoples of the Earth**. Turin, 1941.
D'ORBIGNY, A., *The American Man*. 2 vols., Paris 1839.
RIVET P., The Lagoa Santa Race. *Bulletin and Memoirs* of *the Anthropological Society,* Vol . V, 1908.
ROUMA, C., *The Quitchqua and Aymara Indians*. Brussels, 1913.
STARR, F., **Indians of Southern Mexico**. Chicago, 1899.

R. BIASUTTI, RACIAL ANTHROPOLOGY AND RACIAL HISTORY OF OCEANIA

BIASUTTI R., Ethnological Problems of the Pacific, in: BIASUTTI, *Races and Peoples of the Earth* III. Turin 1941.
FORNANDER A., *An Account of the Polynesian Race*. 3 vols., 1878–85.
MÜHLMANN W. E., *State Formation and Amphictyonies in Polynesia*. Stuttgart 1938.
SHAPIRO, H. L., "Physical Differentiation in Polynesia." *Peabody Museum Bulletin* XX, 1943.
SULLIVAN, L. R., *Marquesan Somatology*. *Pauahi Bishop Museum,* Vol . IX, 1923.
THILENIUS, G., The Significance of Ocean Currents for the Settlement of Melanesia. *Yearbook of the Hamburg Scientific Institute* 1906.

I. SCHWIDETZKY, PREHISTORIC POPULATION BIOLOGY

DOBZHANSKY, Th., "On Species and Race of Living and Fossil Man." **Amer. Journ. Phys. Anthrop.* N. S.* II, 251–265, 1944.
v. EICKSTEDT, E., "Humans and Depictions of Humans in Stone Age Cave Art in France and Spain." *Journal of Morphological Anthropology* XLIV, 15–50, 295–343, 1952.
KRAFT, G., *"Primitive Man as Creator." 2nd ed.* Tübingen 1948.
KRZYWICKI, L., **Primitive Society and Its Vital Statistics**. London, 1934.
MÜHLMANN, E. W., Social Mechanisms of Ethnic Assimilation. Paper 14, 2nd *International Congress of Sociology*, Rome 1951.

SAHLSTRÖM, K. E., and GEJVALL, N. G., **The Grave Field at Kyrckbacken in Horns Parish**. Stockholm 1948 (as cited in *Franz Anz. Altertumswiss.* V, 1952).
SCHWIDETZKY, I., *Fundamentals of Ethnobiology*. Stuttgart 1950.
SIGERIST H. E., *A History of Medicine* I: Primitive and Archaic Medicine. New York 1951 (pp. 532 ff., bibliography on paleopathology).
VALLOIS H. V., "Life Span in Fossil Humans." *L'Anthropologie* XLVII, 499–534, 1937.

O. MENGHIN, FUNDAMENTAL QUESTIONS OF PREHISTORY

Cultural System and General Methodological Principles:

MEISTER R., "Forms of Cultural Existence." *Bl. f. deutsche Philosophie* XVII, 1943.
MEISTER R., The Zonal Structure of Culture. *Vienna Journal of Philosophy, Psychology, and Pedagogy* I, 1951.
STRZYGOWSKI J., *The Crisis of the Humanities*. Vienna 1923.
STRZYGOWSKI, J., "Knowledge, Essence, and Development." *Contributions to Comparative Art Research* II, 1922.

Paleoarchaeology or Prehistoric Archaeology:

JACOB-FRIESEN, K. H., *Fundamental Questions of Prehistoric Research*. Hanover 1928.
MENGHIN, O., *A World History of the Stone Age*. Vienna, 1941.
PESCHEK, CHR., *Textbook of Prehistoric Research*. 1950.
PITTIONI R., *The Prehistoric Foundations of European Culture*. Vienna 1949.

Cultural-Historical Ethnology:

BORNEMANN, F., *Primitive Culture in Cultural-Historical Ethnology*. Mödling, 1938.
van Bulck, G., Contributions to the Methodology of Ethnology. *Vienna Contributions to Cultural History and Linguistics* II, 1931.
GRÄBNER E., *The Method of Ethnology*. Heidelberg 1911.
KLUCKHOHN, C., "Some Reflections on the Method and Theory of the Kulturkreislehre." *Am. Anthrop.* XXXVIII, 1936.
SCHMIDT, W., *Handbook of the Method of Cultural-Historical Ethnology*. Münster, 1937.
SCHMIDT, W., Studies on the Method of Ethnology. *Anthropos* XXXV/XXXVI, 1940/41.

Functionalism, Structural Theory, and the Weight Criterion:

FORDE, D., "The Integration of Anthropological Studies." *Journal of the Royal Anthropological Institute* LXXVIII, 1948 (1951).
JENSEN, A. E., *The Religious Worldview of an Early Culture*. Frankfurt, 1948.
MENGHIN O., Remarks on the Lecture by Prof. F. Krause. *Bulletin of the Anthropological Society of Vienna* LIX, 1929.
PREUSS K. TH., *Textbook of Ethnology*. Stuttgart 1937.

Palethnogeny or Prehistoric Tribal Studies:

MENGHIN, O., "Fundamentals of a Methodology for Prehistoric Tribal Studies." *Hirt Festschrift* I. Heidelberg 1936.

WAHLE, E., "On the Ethnic Interpretation of Early Historical Cultural Regions." *Heidelberg Academy of Sciences*, Philosophical-Historical Class, 1940/41.

Glottogony, Language History, and Linguistic Archaeology:

KAINZ, F., *Introduction to the Psychology of Language*. 1947.
RÉVÉSZ G., *The Origin and Prehistory of Language*. Bern 1946.
SCHMIDT W., *The Language Families and Language Groups of the World*. Heidelberg 1926.
Schrader, O., *"Comparative Linguistics and Prehistory."* Berlin, 1883.
SCHRADER, O., *Reallexikon of Indo-European Archaeology.* 2nd ed. Berlin 1917–29.

Paleopsychology:

v. EICKSTEDT, E., "The Current State of Research on Early Humans." *Arch. J. Claus Schlaginhausen Festschrift* 1949.
KRAFT, G., **Primitive Man as Creator**. Berlin, 1942.
VAN SCHELTEMA, F. A., **Spiritual Repetition**. Leipzig, 1937.

Anthropology and anthropological schools of thought:

Forde, D. (see under "Functionalism").
IMBELLONI, J., "Introduction to the Course in Anthropology." *Anales de Antr. y Etnol.* (Mendoza) **VIII**, 1949.

SERGI, S., "Terminology and Classification of the Human Sciences." *Riv. di Antropol.* XXXV, 1947.

Scientific Thinking in Cultural-Historical Research:

BLANC A. C., "Ethnolyse." **Paideuma** III, 1948.
BLANC A. C., Cosmolysis. *Journal of Anthropology* XXXIV, 1942/43.

On parallels in natural history, see:

FREISLEBEN R., Views on the Origin of Cultivated Barley, etc. *Forsch. u. Fortschr.* XVII, 1941.
SCHIEMANN E., Thoughts on Vavilov's Gene Center Theory. *Die Naturwissenschaften* **XXVII**, 1939.

H. BREUIL, THE EARLY AND MIDDLE PALEOLITHIC

General:

BREUIL, H., and **LANTIER, R.**, **Les hommes de la pierre ancienne**. Paris, 1951.
Burkitt, M. C., **The Old Stone Age**. Cambridge, 1934.
GARROD, D. A. E., "The Near East as a Gateway of Prehistoric Migrations," in: **G. MACCURDY**, **Early Man**. Philadelphia 1937.
GRAHMANN, R., *Prehistory of Mankind*. Stuttgart, 1952.
MENGHIN, O., *A World History of the Stone Age*. Vienna 1931.
Movrus H. L., Old-World Paleolithic Archaeology. *Bull. Geol. Soc. America* LX, **1949** (with extensive bibliography).

OBERMAIER, H., *Prehistoric Man.* Berlin-Munich 1912.
OBERMAIER, H., In numerous articles in *Ebert's Reallexikon der Vorgeschichte*.
Rust A., Reflections on Eurasian-African Cultural Connections in the Stone Age. *Offa* VIII, 1949.
ZEUNER, F. E., **Dating the Past**. London 1946.

Europe:

ALMAGRO, M., *El Paleolítico Español*, in: MENENDES PIDAL, **Historia de España* I*.
Madrid 1947.
BÄCHLER E., *The Alpine Paleolithic of Switzerland.* Basel 1940.
BREUIL H., *Boucher de Perthes, His Precursors, and His Successors*. Paris 1951.
BREUIL, H., "Notes on a Paleolithic Journey through Central Europe." **L'Anthropologie** XXXIII–XXXV, 1923–25.
BREUIL, H., The Early Paleolithic in Western Europe and Its Chronology. *Bull. Soc. Préhist. Franc.* XXIX, 1932.
BREUIL, H., The Flake Industries of the Early Paleolithic. *Préhistoire* I, 1932.
BREUIL, H., and KOZLOWSKI, L., "Studies in Paleolithic Stratigraphy in Northern France, Belgium, and England." **L'Anthropologie** XLI–XLIV, 1931–34.
KADIĆ O., *Humans in the Ice Age in Hungary*. Budapest 1934.
Kozlowski L., The Early Stone Age in Poland. *The Ice Age* I, 1924.
Tschumi, O., *Prehistory of Switzerland I.* Frauenfeld 1949.
VAUFREY, R., The Italian Paleolithic. *Arch. Inst. Paléont. Humaine, Mém.* III, 1928.
Zorz, L. F., *The Paleolithic of Central Europe*. Stuttgart 1951.

Non-European Regions:

BREUIL, H., "A propos de l'industrie atérienne." *Bull. Soc. Préhist. Franç.* XLVII, 1950.
CATON-THOMPSON, G., "The Aterian Industry." *Journ. Royal Anthrop. Inst.* LXXVI, 1946.
GARROD D. A. E., **The Stone Age of Mount Carmel* I*. Oxford 1937.
LEAKEY L. S. B., **Stone Age Africa**. London 1936.
Movius H. L., The Lower Paleolithic Cultures of Southern and Eastern Asia. *Transact. Am. Phil. Soc.* XXXVIII, 1948.
Movius H. L., On the Archaeology of the Lower Paleolithic in South Asia and the Far East. *Bulletin of the Anthropological Society of Vienna* LXXX, 1950.
RUHLMANN A., The Moroccan Paleolithic. *Publ. Serv. Antiqu. Maroc.* VII, 1945.
RUHLMANN A., "On the Subdivision of the Moroccan Aterian." *Publ. Serv. Antiqu. Maroc*. VIII, 1948.
Rust, A., *The Cave Finds from Jabrud (Syria)*. Neumünster, 1950.
Various authors: The Exhibition of Stone Age and Pleistocene Geology **from** the Cape to Britain. *University of London, Institute of Archaeology, Occasional Paper* IX, 1948.

Daily Life and Spiritual Culture:

KRAFT, G. *Primitive Man as Creator.* Berlin 1942.
LUQUET, G., **The Art and Religion of Prehistoric Man**. Paris 1926.
MAINAGE, Th., *The Religions of Prehistory: The Paleolithic Age.* Paris 1921.

On the Eolithic Problem:

ADRIAN, W., *The Question of the North German Eoliths*. Paderborn 1948.
BARNES A. S., "On the Way Nature Imitates Human Work in the Splitting of Flint." *Bull. Soc. Préhist. Franç.* XXXIV, 1937.

A. RUST, THE LATE STONE AGE

General:

See the works by BREUIL and LANTIER, BURKITT, GARROD, GRAHMANN, MENGHIN, OBERMAIER, RUST, VAUFREY, and ZEUNER cited in the bibliography for H. BREUIL's article.

BREUIL, H., **Les subdivisions du paléolithique supérieur et leur signification**. 2nd ed., 1937.

COLLIE, G. L., **The Aurignacians and their Culture**. Beloit, Wisconsin, 1928.
GARROD, D. A. E., **The Upper Paleolithic in the Light of Recent Discoveries**. **Proceedings of the Prehistoric Society**, Vol. IV, 1938.
PEYRONY D., The Périgordian, the Aurignacian, and the Solutrean in Eurasia. *Bull. Soc. Préhist. Franç.* XLV, 1948.

Europe:

See the works by ALMAGRO, BREUIL (Voyage), KADIČ, KOZLOWSKI, TSCHUMI, and ZOTZ cited in the bibliography for H. BREUIL's article.
BAYER J., The Early Stone Age in the Sudeten Lands. *Sudeta* I, 1925.
BAYER J., The Chronological and Cultural Relationship Between the Cultures of the Narrow-Blade Culture Circle During the Diluvium in Europe. *Die Eiszeit* V, 1928.
BLANC A. C., "On the Penetration and Spread of the Upper Paleolithic in Europe and Italy." *Quartär* I, 1938.
CHEYNIER, A., "The Proto-Magdalenian Industries." *Bull. Soc. Préhist. Franç.* XLVIII, 1951.

GARROD D. A. E., *The Upper Paleolithic Age in England*, Oxford 1926.
HANČAR F., Problems of the Late Paleolithic in Eastern Europe. *Quartär* IV, 1942.
JURA A., The Aurignacian in Poland. *Quaternary* I, 1938.
LACORRE, F., and BARRAL, F., "New Insights into the Stone Tool Industries and the Ages of the Skeletons from the Grotte des Enfants at Grimaldi." *Riv. Studi Liguri* XIV, 1948.
Mottl M., Fauna, Flora, and Culture of the Hungarian Solutrean. *Quaternary* I, 1938.
Mottl, M., The Aurignacian in Hungary. *Quaternary* IV, 1942.
PERICOT, L., *La Cueva del Parpalló*, Madrid 1942.
PEYRONY D., "The 'Aurignacian' Industries in the Vézère Basin." *Bull. Soc. Préhist. Franç.* XXXIII, 1933.
PEYRONY D., The Périgordian and the Aurignacian (New Observations). *Bull. Soc. Préhist. Franç.* XXXIII, 1936.
PEYRONY D., The Grimaldians in Périgord. *L'Anthropologie* II, 1939/40.
PEYRONY D., Origin of the Magdalenian I with "flint flakes with abrupt retouch." *Bull. Soc. Préhist. Franç.* XLI, 1944.
PEYRONY D. and E., Laugerie Haute near Les Eyzies (Dordogne). *Arch. Inst. Paléont. Humaine*, Mém. XIX, 1938.

Rust A., On the Cultural Development of the Late Glacial Upper Paleolithic in Northwestern Europe. *Festschr. G. Schwantes*, Neumünster 1951.
SCHWABEDISSEN, H., The Magdalenian in the Northwestern European Lowlands. *The Ice Age and the Present* I, 1951.

Areas outside Europe:

See the works by GARROD, HANČAR, LEAKEY, and RUST cited in the bibliography for H. BREUIL's article.

ALMAGRO BASCH, M., *Prehistory of North Africa and the Spanish Sahara*. Barcelona 1946.

Daily Life and Intellectual Culture:

See the works by KRAFT, MAINAGE, and LUQUET cited in the bibliography for H. BREUIL's article.
BANDI, H. G., *Switzerland in the Reindeer Era*. Frauenfeld 1947.
Rust, A., *The Paleolithic Reindeer-Hunting Camp at Meiendorf*. Neumünster 1937.
Rust, A., *The Paleolithic and Mesolithic Finds from Stellmoor*. Neumünster, 1943.

J. G. D. CLARK, THE MESOLITHIC PERIOD

General:

BURKITT, M. C., **Our Early Ancestors**. Cambridge, 1926.
CHILDE V. G., *Prehistoric Migrations in Europe*. Oslo—Leipzig—Paris—London—Cambridge, Mass. 1950.
CLARK, J. G. D., **The Mesolithic Settlement of Northern Europe**. Cambridge, 1936.
CLARK, J. G. D., *Man and Nature in Prehistory*. *University of London, Institute of Archaeology, Occasional Papers* VI, 1944.
CLARK, J. G. D., **Prehistoric Europe: The Economic Basis**. London, 1951.
MENGHIN O., Mesolithic Cultural Development in Europe. *Report of the Roman-Germanic Commission*
XVIII, 1929.
MENGHIN O., *A World History of the Stone Age*. Vienna 1931.
OCTOBON E., Reflections on the Hiatus, Its Two Aspects: Paleolithic–Mesolithic and Mesolithic–Neolithic. *Tschumi Festschrift,* Frauenfeld 1947.

Regional Studies and Important Find Reports:

Almagro, M., in Mendendez Pidal, **Historia de España* I*. Madrid, 1947.
ANONYMOUS, *The Culture Sequence in the Northern Stone Age*. *University of London, Institute of Archaeology, Annual Report* IV, 1946/47.
AYRÄPÄÄ A., The Oldest Stone Age Finds from Finland. **Acta Archaeol.** XXI, 1950.
BECKER J., Stone Age Sites at Odrup Naes. **Aarböger** 1939.
BERNABO BREA, L., *Excavations in the Arene Candide Cave*. Bordighera 1945.
BOE and NUMMEDAL, *The Finnmarkian*. Oslo 1936.
Braidwood R. J., "A Village of Early Farmers in Iraq." *Antiquity* 1950.
BREUIL, H., and ZBYSZEWSKI, G., "Revision of the Mesolithic Industries of Muge and Magos." *Comm. Serv. Geol. Portugal* XXVIII, 1947.
CLARK, J. G. D., **The Mesolithic Age in Britain**. Cambridge, 1932.

CLARK, J. G. D., "Excavations at Farnham ." *Proceedings of the Prehistoric Society, Vol.* V, 1939.
CLARK J. G. D., Preliminary Reports on Excavations at Star Carr. *Proc. Prehist. Soc.* XV, 1949 and XVI, 1950.
CLARK J. G. D., The Earliest Settlement of the West Baltic Area. *Proc. Prehist. Soc.* XVI, 1950.
CONDE DELLA VEGA DEL SELLA, **El Asturiense**. Madrid 1923.
CORBEL J., The Ertebölle Culture and the Origins of the Campignian. *Bull. Soc. Préhist. Franç.* XLVI, 1949.
COULONGES L., The Prehistoric Sites of Sauveterre-la-Lemance. *Arch. Inst. Paléont Humaine*. Mém. XVIII, 1937.
DANIEL M. and R., New Studies on the French Tardinoisian. *Bull. Soc. Préhist. Franç.* XLIII, 1946.
FREUNDT, A. E., Komsa-Fosna-Sandarna . **Acta Archaeol.** XIX, 1948.
GARROD, D. A. E., **The Stone Age of Mount Carmel* I*. Cambridge, 1937.
GJESSING, G., *Circumpolar Stone Age*. **Acta Arctica* * II, 1944.
GRAZIOSI, P., Paleolithic Industries and the Transition to the Mesolithic in Italy. *Bull. Soc. Préhist. Franç.* XLVIII, 1951.
INDREKO R., *The Middle Stone Age in Estonia*. Stockholm 1948.
Kozlowski L., The Mesolithic Period in Poland. *L'Anthropologie* XXXVI, 1926.
LACAM R., NIEDERLAENDER A., VALLOIS H. V., The Mesolithic Site at Cuzoul de Gramat, *Arch. Inst. Paléont. Humaine*, Mém. XXI, 1944.
LEAKEY, L. S. B., **Stone Age Africa**. London, 1936.
MATHIASSEN Th., The Gudenaa Cultures. *Aarböger* 1937.
MATHIASSEN, Th., DEGERBÖL, M., and TROELS-SMITH, O. G. J., *Dyrholmen, a Stone Age settlement on Djursland*. 1942.
MITCHELL, G. F., "The Larnian Culture ." *Journal of the Royal Society of Antiquaries of Ireland, vol.* LXXIX, 1949.
MOVIUS, H. L., The Chronology of the Irish Stone Age . *University of London, Institute of Archaeology, Occasional Paper* IV, 1940.
NOUGIER L. R., *The Campanian Civilizations in Western Europe*. Le Mans, 1950.
PÉQUART, M. and ST.-J., Téviec, a Mesolithic site and necropolis in Morbihan. *Arch. Inst. Paléont. Humaine*, Mém. XVIII, 1937.
PÉQUART, M. and ST.-J., New Excavations at Mas d'Azil. *Préhistoire* VIII, 1941.
ROTHERT, L., *The Middle Stone Age in Silesia*. Leipzig, 1936.
Rust, A., *The Cave Finds from Jabrud (Syria)*. Neumünster 1950.
SCHWABEDISSEN, H., *The Middle Stone Age in Western Northern Germany*. Neumünster 1944.
VOGELSANG, O., *The Mesolithic Settlement at Bolschweil*. Freiburg Studies in Prehistory I, 1948.

H. SEDLMAYR, ORIGINS AND BEGINNINGS OF ART

BANDI H. G., *Switzerland in the Reindeer Age*. Frauenfeld 1947.
BÉGOUËN H., The Magic Origin of Prehistoric Art. *Antiquity* III, 1929.
BOHMERS, A., The Aurignacian Group. A Classification of the Earliest Prehistoric Art. *Germanien*, Supplement 3, 1942.
FRANZ L., *Religion and Art of Prehistory*. Prague-Leipzig 1937.
GROSSE, E., *The Beginnings of Art*. Freiburg-Leipzig, 1894.

HOERNES, M., and MENGHIN, O., **Prehistory of the Visual Arts in Europe**. Vienna 1925.
KÜHN, H., *Art and Culture of Prehistoric Europe: The Paleolithic*. Berlin 1929.
KRAFT, G., *Primitive Man as Creator*. Berlin 1942.
VAN DER LEEUW, G., **De primitive Mens en de Religie**. 1937.
LUQUET, G., **The Art and Religion of Prehistoric Man**. Paris, 1926.
Luquet, G., *Primitive Art*. Paris, 1930.
MAINAGE, Th., *The Religions of Prehistory: The Paleolithic Age*. Paris, 1921.
MENGHIN, O., *A World History of the Stone Age*. Vienna, 1931.
Nierhaus, R., "The Problem of the Psychological Interpretation of Prehistoric Art." **Prähist. Zeitschr.** XXVI, 1935.
OBERMAIER H., **El hombre fósil**. Madrid 1924.
OBERMAIER, H., entry "Art" in *Ebert's Reallexikon der Vorgeschichte*.
OBERMAIER, H., **Prehistory of Mankind**. Freiburg, 1931.
PEREZ B., *Art and Poetry in Children*. 1888.
ADAMA VAN SCHELTEMA F., *Spiritual Repetition*. Leipzig 1937.
ADAMA VAN SCHELTEMA, F., *The Art of Our Ancestors*. Leipzig, 1936.
IPEK, Yearbook of Prehistoric and Ethnographic Art, ed. by H. KÜHN, 1925 ff.

F. EPPEL, THE ART OF THE EARLY AND MIDDLE STONE AGES

As general works, those listed in the bibliography of H. SEDLMAYR's article, especially those by BÉGOUËN, HOERNES, KRAFT, KÜHN, LUQUET MENGHIN, and v. SCHELTEMA.

On the origins of art:

EPPEL, F., "The Trois Frères Cave and the Problem of Paleolithic Art." *Mitt. Anthr. Ges. Wien* LXXIX, 1949.
LUQUET G. H., "Magic in Paleolithic Art." **Journal de Psychologie norm. et pathol.** 1931.
MILLE P., "On the Psychological Origin of the Beginnings of Art." **L'Anthropologie** XXXII, 1922.
SAINT-PÉRIER, **Prehistoric Art**. Paris 1932.

On individual major periods of Paleolithic art:

AL DEL RIO, BREUIL, SIERRE, **Cavernes Cantabriques**. Monaco 1912.
ALMAGRO, M., "El arte rupestre naturalista del Levante Español y el arte rupestre esquemático," in: PIDAL, R. M., **Historia de España* I*. Madrid, 1947.
BANDI, H. G., *Switzerland in the Reindeer Age*. Frauenfeld 1947.
BREUIL H., *Schematic Cave Paintings of the Iberian Peninsula* I–IV, Lagny 1933–35.
BREUIL, H., The Evolution of Cave Art in the Decorated Caves and Rock-Shelters of France . *French Prehistoric Congress* 1934 (1935).
v. EICKSTEDT, E., "People and Depictions of People in Stone Age Cave Art in France and Spain." *Z. Morph. Anthr.* XLIV, 1952.
HANČAR, F., "On the Problem of Venus Figurines in the Eurasian Upper Paleolithic." *Prähist. Zeitschr.* XXX/XXXI, 1939/40.
HANČAR F., Problems of the Late Paleolithic in Eastern Europe. *Quartär* IV, 1942.

LINDNER K., *Hunting in Prehistoric Times*. Berlin 1937 (Provides many interpretations of Paleolithic depictions).
OBERMAIER H., Problems of Paleolithic Painting in Eastern Spain. *Quartär* I, 1938.
PEYRONY D., *Elements of Prehistory*. 5th ed. Paris 1948.
SACCASYN DELLA SANTA, *Human Figures of the Eurasian Upper Paleolithic*. Antwerp 1947.

Important Individual Studies (Monographs on Site Locations):

Absolon K., *The Exploration of the Diluvial Mammoth-Hunter Site at Unter-Wisternitz in the Pollauer Mountains in Moravia*. Brno 1938.
BRFUIL, OBERMAIER, WERNERT, *La Pileta*. Monaco 1915.
CABRÉ, J., The Cave Paintings of Aldeaquemada. *Com. de Invest. Paleont. y Prehist.*, Mem. XIV, 1917.
CAPITAN-BOUYSSONIE, *A Prehistoric Art Workshop*, Limeuil 1924.
CAPITAN, BREUIL, PEYRONY, *Les Combarelles*. Paris, 1924.
CAPITAN, BREUIL, PEYRONY, *The Font-de-Gaume Cave*. Monaco 1910.
CARTAILHAC-BREUIL, *The Altamira Cave*. Monaco 1906.
KÜHN, H., The Paintings of the Valltorta Gorge. *IPEK*, 1926.
KUHN, H., *Art and Culture of Prehistoric Europe*. Berlin, 1929.
LALANNE-BOUYSSONIE, The Paleolithic Site at Laussel. *L'Anthropologie* L, 1941–46.
OBERMAIER, H., The New Ice Age Rock Paintings of the Gasulla Gorge. *IPEK*, 1935.
OBERMAIER, WERNERT, The Cave Paintings of the Valltorta Ravine. *Com. de Invest. Paleont. y Prehist.*, Mem. XXIII, 1919.
PERICOT, L., *The Parpalló Cave*. Madrid 1942.
PERICOT, L., *Rock Art*. Barcelona–Buenos Aires, 1950.
PIETTE, E., The Colored Pebbles of Mas d'Azil. *L'Anthropologie*, 1896.
RIEK G. *The Ice Age Hunting Site at Vogelherd.* Tübingen 1943.
TROMBE-DUBUC, The Prehistoric Site of Ganties-Montespan. *Arch. Inst. Paléont. Humaine*, Mém. XXII, 1947.
WINDELS, F., *Lascaux*. Montignac-Vézère, 1948.

P. W. SCHMIDT, PRIMITIVE CULTURES

On the Method of Cultural-Historical Ethnology:

GRÄBNER, F., **Method of Ethnology**. Heidelberg, 1911.
LOWIE R. H., *The History of Ethnological Theory*. New York 1937.
MENGHIN, O., *A World History of the Stone Age*. Vienna 1931.
SCHMIDT W., Modern Ethnology. *Anthropos* I, 1906.
SCHMIDT, W., **Handbook of the Method of Cultural-Historical Ethnology**. Münster, 1937.
SCHMIDT, W., Studies on the Method of Ethnology. *Anthropos* XXXV/XXXVI, 1940/41.

General Remarks on Primitive Cultures:

BORNEMANN, F., *"Primitive Culture in Cultural-Historical Ethnology."* Sankt Gabrieler Studien VI, 1938.
KOPPERS, W., *Primitive Man and His Worldview*. Vienna, 1949.
SCHMIDT, W., and **KOPPERS, W.**, *Peoples and Cultures*. Berlin-Munich, 1924.

Monographs on Primitive Cultures:

BIRKET SMITH K., *The Eskimos*. London 1936 (German edition 1947).
COOPER, J. M., "Andamanesc-Semang-Eta Cultural Relations." **Primitive Man** XIII, 1940.
v. FÜRER-HAIMENDORF, CHR., **The Chenchus**. London 1943.
GUSINDE, M., *The Yamana*. Mödling, 1937.
GUSINDE H., *Primitive People in Tierra del Fuego*. Vienna 1946.
KOPPERS, W., *Among the Tierra del Fuego Indians*. Stuttgart, 1924.
KRAUSE, F. *The Culture of the California Indians.* Leipzig, 1921.
KROEBER, L., **Handbook of the Indians of California**. Washington, 1925.
LING, H., **The Aborigines of Tasmania**, 1890.
RADCLIFFE-BROWN, A. R., **The Andaman Islanders**. Cambridge–New York, 1933.
RASMUSSEN, K., MATHIASSEN, Th., and BIRKET-SMITH, K., **Reports of the Fifth Thule Expedition**. Copenhagen, 1927 ff.
SCHEBESTA, P., *The Bambuti Pygmies of Ituri* I–IV. Brussels, 1938–50.
SCHEBESTA, P., *People Without a History*. 1947.
SCHMIDT, W., *The Place of the Pygmy Peoples in the History of Human Evolution*. Stuttgart, 1910.
Stow, G., **The Native Races of South Africa**. 1905.
TRILLES H., *The Pygmies of the Equatorial Forest*. Paris-Münster 1932.

The Religion of Primitive Cultures:

SCHMIDT, W., *The Origin of the Idea of God*, Vol. I–IV. Münster, 1912–35.
SCHMIDT W., *The Origin and Development of Religion*. Handbook of Comparative Religious History. Münster 1930.
SCHMIDT, W., The Origin of Evil in the Earliest Traditions of Humanity. *Wort und Wahrheit* (Vienna), Vol. 3.

Other Specific Topics:

GRÄBNER, F., "The Earth Oven in the South Seas." **Anthropos** VIII, 1913.
KNABENHANS, A., "Division of Labor and Communism in Australian Food Procurement." *Festschr. E. Hahn*, 1917.
MALINOWSKI, B.R., **The Family among the Australian Aborigines**. London, 1910.
v. NORDENSKJÖLD, E., *A Geographical and Ethnological Analysis of the Material Culture of Two Indian Tribes in the Gran Chaco*. Gothenburg 1918.
SCHMIDT, W., *Property in the Earliest Stages of Humanity*. Münster 1937 (a).

K. J. NARR, ADVANCED HUNTING

General Remarks on Advanced Hunting:

BIRKET-SMITH, K., *History of Culture*. Zurich 1947.
GROSSE, E., *The Forms of the Family and the Forms of the Economy*. Freiburg-Leipzig, 1896.
MENGHIN, O., *A World History of the Stone Age*. Vienna 1931.
SCHMIDT, W., **The Origin of the Idea of God**, Vol. VI. Münster, 1935.
SCHMIDT, W., and KOPPERS, W., *Peoples and Cultures*. Berlin-Munich 1924.

Regional Studies:

BAUMANN, H., "African Cultural Circles." **Africa* VII*, 1934.
BAUMANN, H., THURNWALD, R., and WESTERMANN, D., *The Ethnology of Africa*. 1940.
BIRKET-SMITH, K., *The Eskimos*. Zurich, 1947.
KRICKEBERG, W., "America," in: H. A. BERNATZIK, *The Great Ethnology*, Vol. III. Leipzig, 1939.
RASMUSSEN K., MATHIASSEN TH., BIRKET-SMITH K., **Reports of the Fifth Thule Expedition**. Copenhagen 1927 ff.
SCHEBESTA, P., *The Bambuti Pygmies of Ituri*, Vol. I–IV. Brussels, 1938–50.
SOERGEL, W., *Hunting in Prehistoric Times.* Jena, 1922.

Prehistory of Africa and Rock Art:

BEHN, F., "Prehistoric Rock Art in Karelia and Western Siberia." *Proceedings of the Saxon Academy of Sciences, Phil.-Hist. Class* 98, 1950.
BURKITT M. C., *South Africa's Past in Stone and Paint*. Cambridge 1926.
LEAKEY, L. S. B., **Stone Age Africa**. London, 1936.
OBERMAIER, H., and KÜHN, H., *Bushman Art*. Berlin, 1930.
PETRI, H., and SCHULZ, A. S., Rock Engravings in Northwest Australia. *Journal of Ethnology* LXXVI, 1951.
TALLGREN, A. M., *Inner Asiatic and Siberian Rock Pictures*. **Eurasia Septentrionalis Antiqua** VIII, 1933.

Intellectual Culture:

BAUMANN, H., "African Wild and Bush Spirits." *Journal of Ethnology* LXX, 1938.
BAUMANN, H., "Nyama, the Force of Vengeance." **Paideuma** IV, 1950 (Frobenius Institute Festschrift).
JENSEN, A.-E., "Do Magical Acts Exist?" *Journal of Ethnology* LXXV, 1950.
KIRCHNER, H., "An Archaeological Contribution to the Prehistory of Shamanism." **Anthropos** XLVIII, 1952.
PETRI, H., "Cult Totemism in Australia." **Paideuma** V, 1950.
PETRI H., Kuràngara: New Magical Cults in Northwest Australia. *Journal of Ethnology* LXXV, 1950.
PETRI, H., "Changes in the Spiritual Culture of Northwest Australian Tribes." *Published by the Museum of Natural History, Ethnology, and Commercial Studies, Bremen*, Series B, 1950.
SCHMIDT R. R., *The Spirit of Antiquity*. Berlin 1934.
SCHMIDT, W., *The Origin and Development of Religion*. Handbook of Comparative Religious History. Münster 1930.

Anthropology:

Coon, C. S., **The Races of Europe**. New York 1939.
v. EICKSTEDT, E., *Racial Science and the History of Human Races*. Stuttgart 1943.

INDEX

Abbevillian 271, 276
Fluvial Deposits 277 ff.
Abri-Laussel 359
Flakes 62, 268 ff.
Theory of Descent 21, 22, 235
Acheulean 271, 276, 349
Agriculture 324, 325, 326
Lower primates 39
Africa 163, 167 ff., 175 ff.
Egypt 130, 178
Ainu 128, 162
Accumulative cultures 502
Albania 144
Alithic Period 269
Omniscience 478
Alpine 122, 142
Archaeology, linguistic 235
Archaic forms 116
Early Paleolithic 64 ff., 219
Early and Middle Paleolithic 259 ff., 280 ff.
Amazonian 196, 198
America 153, 188 ff.
Annam 138
Andronovo 128, 129
Andronovo culture 126
Animism 470
Adaptation 27
Anthropoids 34 ff.
Apalacids 196, 199
Equatorial Block 108
Arabs 176
Arabia 129
Division of Labor 388, 418 ff.
Archaeanthropi 98
Arctic Cultures 326
Armenids 123, 124, 130, 142
Armenians 146
Arm length 36
Asia 147 ff.
Asselar 110
Ethnic assimilation 218
Asturéen 329
Atérias 272
Ethiopid 171–184
Initiation of youths 516, 518
Eye 27, 138
Aurignac 100, 101, 120, 122, 175
Aurignacid 119, 125, 126
Aurignacian 102, 292, 293, 294, 349, 357, 358, 359
Excesses 459
Australids 209
Australia 205, 207
Australians 216, 208
Australoids 197
Australopithecus 91–97
Avars 156
Azilians 320, 322, 342, 367
Aztecs 192
Bambutids 167, 186
Bantu 185
Bantu-Negro 96
Basques 123, 144
peasant economy 323 ff., 522
pelvic bones 38
axe 334
leg length 36
Berbers 172
Berberide 131, 143, 176, 182
Burial 286, 287, 307 ff., 310, 342 ff., 343, 344
Bechuanaland 92
Population movement 297, 315, 319
Population biology 217 ff.
Beehive hut 430
Visual arts 450 ff.
Image content 360
Visual art 354
Biodynamics 115 ff., 118
Burma 158, 160
Votive offering 494
Blood gen q 140, 141
Blood type 140
Blood atonement sacrifice 496
Land ownership 405
Boat 338, 339
Borreby type 122
Boskop 173, 174, 181, 184
British Isles 144
Broken Hill 79, 87, 88
Brno 119
Brno race 101
Brutalism 14
Brüx 100
Bulgaria 144
Bushman 96, 168, 185
Bushman culture 506
Capsia 104, 107–109, 120
Catarrhinae 54, 57
Chancelade 100–104, 107, 119, 120
Chapelle Type 88
China 67, 151, 155, 157 ff.
Great Wall of China 156
Choukouténien 71 f., 270
Chou-Kou-Tien 67, 68, 71, 72, 105, 154, 273
Chronology 250, 251
Chronology (Ice Age) 265
Cercopithecidae 39
Cerebralization factor 53
Clactonian 271, 276
Clantotemism 516, 517
Clivus coordinates 69, 70
Columbids 194, 202
Combe-Capelle 102, 119
Cromagnids 119, 120, 127, 175
Cro-Magnon 100 ff.
Denmark 143, 330
Iliac bone 96
Representational value 30
Darwin 21, 22, 376
Darwinism 14
Decoupées 363
Germany 143
Diluvium 58
Dinarids 123, 124, 142
Dordogne 101
dramatic art 451
Dravidian groups 133, 164
piercing 335
marriage 393 ff., 457, 468
adultery 395, 396, 458
divorce 395
property 459 ff.
Property type 117
Ice-hunting culture 508
Ice ages 60, 115, 204, 265 ff., 318
Ice Age humans 260 ff., 263 ff.
Elevation 52, 53
Ivory plaques 362
Concept of evolution 44
Eoanthropus 84
Earthen oven 423
Ergology 432 ff., 511 ff.
Nutrition 298 ff.
Appearance analysis 238, 239
Ertebölle 330, 337, 345
Ertebölle coastal culture 322
Eskimo 191, 202
Estonians 145
Ethnology 235, 377
Ethnolysis 234
Etruscans 123
Eurasian continent 116

Europide 135, 153, 163, 175, 179, 185, 211, 212
Evolution 28, 29, 31, 34, 97, 384 ff.
Evolutionism 13, 16, 375, 377, 378, 384 ff., 462, 468, 497
Directions of evolution 89
Evolutionary trends 90
Theory of evolution 21–25, 46
Eternity 476, 477
Exogamy 401, 402, 514
Falsche subrace 142
Trap 511
Family 396 ff., 414 ff., 458
Family, independence 409 ff.
Color illustration 358
Hand axe 62
Hide processing 336
Rock shelters 273 ff., 282, 283, 332
Rock faces 364, 369
Rock art 518
Fetalization hypothesis 44
Fire 424–426
Fire swirls 426
Fire saws 426
Fire-making 426
Figures 341, 368
Finns 129
Finland 145, 323
Fishing 285, 305, 330
Bas-relief 358, 359
Lichens 337
Meat-based diet 420, 421
Fontéchevade 85, 86
Human morphological characteristics 97
Morphological radiation 98
Reproductive communities 217
Franco-Cantabrian Group 357 ff.
France 144
Frieze 368
Early forms of the Sapiens group 87
Early Pleistocene 92
Fuegide 196, 198
Ful(be) 182
Fear 469
Furfooz 100
Foot types 37, 38, 39
Wholeness 29, 30, 34, 48
Prayer 489, 490
Dentition 42, 43, 48, 56, 72, 73, 94, 95
Vessel 437
Brain 53, 90, 91, 93
Brain Index 55, 56
Brain Growth 40
Spirit 35
Spiritual Life 285 ff., 307 ff., 339 ff., 516 ff.
Spiritual World Behavior 27
Spirituality of Primitive Man 96
Yellow 117
Genotype 111, 112
Device 437
Germanic peoples 127
Gift-giving visits 406
sexual intercourse 393
philosophy of history 12
society 285 ff., 514 ff.
social order 392 ff.
Facial shape 90, 93, 148
Form 475
Beverage 422
Theory of violence 413
Antlers 336
Trade 514
Poison 511
Bell Beaker culture 123
Glottogony 235, 256
Gorilla 93, 94
God 456, cf.: Supreme Being
Gods 309
Concept of God 470
Gravettian 292, 293
Engraving 340
Grenelle 100
Greece 144
Grimaldi 100, 101, 120
Extended family 401, 402, 403, 406, 412, 415, 461
Land 461 ff.
Basic culture 387 ff.
Guanches 105
Günze Ice Age 60, 276
Goodness 480, 481
Hair 148, 209, 210
Hair color 136
Proximians 56
Hamburg culture 288, 295
Hamitic 172
Trade 337, 338
Hand types 37
Breath soul 484
Chieftain 403, 404
Chiefdom 515
House 512
House Construction 312
Hussa 181, 182
Skin 136, 138, 148
Hebrews 130
Heidelberg 75, 76, 118
Savior 392
Occipital Scale 94
Brain weight 41, 67
Brain capacity 95
Advanced civilization 522
Supreme Being 411, 412, 425, 456, 471, 472, 480, 482, 488, 500, 518, 520, 521
Supreme Being — Solitude 482
— Omnipresence and Omniscience 477 ff.
— Omnipotence and Omnibenevolence 479 ff.
— Attributes and Functions 475
— Wholeness 484 ff.
— Form 474 ff.
— Name and Abode 473 ff.
Hoedic 106
Cave 273 ff., 282, 311, 332
Cave Painting 519
Holland 143
Wood 336
Hominoidea 97, 98
Homo sapiens 80, 90, 93; see also: Sapiens group
Honey 421
Hottentots 168, 185
Hip bone 96
Huns 155, 156
Hut 313, 333, 512
Hypotheses 245
Igloo 512
Native Americans 203
Indide 132, 133, 146
India 131, 132, 134, 160, 163, 164
Indo-Europeans 127
Indonesia 161
Industries 266 ff., 270 ff.
Industries (Chronology) 273–277
Industries, Pre-Lithic or Alithic 269 ff.
Interglacial Period 61
Intelligence 34
Iran 131
Ireland 322
Iceland 143
Isolation 115
Isthmids 196, 201, 202

Jagd 284, 298 ff., 300, 301, 327, 418, 507, 512
Hunting Equipment 335
Hunting Methods 301, 302, 304, 305, 511
305, 511
Hunting and Gathering Stage 375 ff.
Hunter 191, 192
Hunter-Fisher Groups 332
Hunter-Fisher culture 325, 326
Hunter culture 504, 508, 509, 510, 511 ff.
Hunting, high-level 390, 502 ff., 504, 507 ff., 508
Japan 157, 162
Jarmo people 324
Java 64, 65, 66, 67, 73, 74, 651
Juden 145, 146, 177
Judaism 124
Youth Initiation 463 ff., 467, 497 ff., 498, 499
Early Paleolithic 102
Early Paleolithic 62, 99 ff., 103, 219, 220, 289 ff., 509 507
Kafrids 171, 185
limestone slabs 364
Outlines of skulls 70
Cambodia 161
Camel 178
Chambers 115
Comb-pattern pottery 128
Struggle for Existence 46
Kanam 86
Cannibalism 345
Kanjera 86
Capacities (Skulls) 73
Caribou hunters 191
Mount Carmel (Palestine) 80, 81, 98
Causal research 383 ff.
Conical-roofed hut 430
Wedge-shaped tool 208
Club 434
Kha 160, 161
Khoisan 168, 173, 183 ff., Pebbles 367
Child 397 ff.
Number of children (restriction) 222
Theories of the chin 77
Classification 112, 113
Clothing 306 ff., 307, 336, 427 ff., 460
Nuclear family 514
Small Sculptures 363
Climate zones 115
Blade cultures 294
Bone Tools 61, 269, 290
Kohl-Larsen 75
Congo 186, 187
Constitution 112
Continuity of Cultural elements 249
Head shape 138
Korea 162
Grains 422
Body painting 513
Body weight 41
Posture 35, 40, 44, 368
Height 138
Correlation rule 49, 50, 52
Diseases 221
War 407, 408
War and Peace 406 ff.
Kromdraai 92
Cult 487 ff., 489, 500 ff.
Cult totemism 517, 519
Culture 280 ff.
Cultural Analysis 239, 240
Cultural units 244
Cultural units (in) 246 ff.
Cultural Factors 90
Cultural Development 241, 254
Cultural Development (Factors) 253
Cultural history 11 ff.
Cultural hero 392
Cultural-historical ethnology 375 ff.
Cultural-historical method 379 ff.
School of Cultural History 17
cultural sphere 291, 385, 386, 387, 388
Cultural Circle Preservation 241
Cultural periods 278 ff.
Cultural Provinces 278 ff.
Cultural Layers 380 ff.
Cultural diffusion 242
Cultural Change 252
Art 307 ff., 339 ff., 346 ff., 356 ff., 449 ff.
Artists 347
Kurgan culture 126
Short-headed races 122 ff.
La Chapelle-aux-Saints 78
Lagide 196, 198
Lamarck 22
Larnien 322
Longitude-Latitude Index 64
Languedoc 271
Lao 160
Lappide 142
Communities 217, 218, 219
Food 460, 461
Habitat 115
Lifespheres 219
Government 403 ff.
Levalloisian 271, 276
Latvians 145
Liau 159, 160
Linear outline drawings 358
linguistic archaeology 255
Literary works 443 ff.
Lolo 160
Macroevolution 25
Madagascar 161, 186
Madjaren 156
Magdalenian 102, 292, 320, 344, 363, 366
Magic 520
Magism 470
Maglemose 327, 328, 341, 342
Malaia 165
Malays 161
Malide 165
Mammoth 304
Manchuria 159
Manism 470
Massagetae 126
Mauritanians 179, 180
Maya 192, 202
Mehta 104, 105, 109, 176
Mediterranean 121, 122, 129, I43, I72
Mediterranean 120 ff., 130, 175
Megalithic builders 127
Polyphony 454
Melanesian 209, 212
Melanesia 163, 204, 210
Melanesians 198, 209
Melanesian language 207
Melanide 148, 152 ff., 162 ff.
Melody formation 453
Human 369
Early Paleolithic 62
Human remains, oldest 33 ff.
Creation of humankind 482
Human Mind 229
Becoming Human 49 ff., 229, 390
Incarnation (chronological) 58 ff.
Menton 101
Mesoamerica 189

Mesolithic 61, 99 ff., 105 ff., 110
Mesopotamia 130
Methods of cultural-historical research 237
Miao 159, 160
Micoquian 271
Microevolution 25
Microliths 319
Micro-Mousterian 272
Micronesia 204
Micronesians 206, 210, 215
Microstyle industries 321
Microstyle technique 320, 333
Mindel 276
Mixed culture 382 ff.
Middle Paleolithic 62, 280 ff.
Middle Pleistocene 89
Moi 161
Mongolia 159
Mongolian fold 148
Mongoloid 73, 147, 148, 150, 153, 163, 197, 199, 200, 201, 202, 211
Monogamy 394, 396, 458
Monotheism 471
Morgan 231
Motifs of the Patterns 341
Mousterian 99, 271, 274
Mousterian-Levalloisian 272
Mugem 107, 108, 121, 328
Mundarians 160
Shell mounds 328, 330
Music 354, 452 ff., 519
Patterns 341
Mutation 25, 26, 27, 29
Theory of mutation 22, 23, 27
Motherhood 397

Nudity 458
Food 301, 327 ff.
Foodstuffs 420 ff.
Foodstuffs (preparation) 423 ff.
Natufians 109, 120, 324, 342
Theories of natural mythology 470
Neanderthal 80, 81, 82, 86, 88, 90, 91, 99, 100, 103, 118
Neanderthalensis group 63, 78 ff., 79
Neanthropi 95, 98
Negride 164–187
Negritide 165
Negrito 148, 152, 165, 166
Neo-Darwinism 25
Neolithic 61, 122
Neopallium 53

Altricial state 41
Colicial state 42
New Guinea 206, 210
New Caledonia 207
New Zealand 205
Ngandong (Java) 73
Nilotide 170, 171, 183
Nomenclature 113
North Atlantic 142
Nordide 126, 127, 128, 129
Northern Cultures 123
Northern Race 141
Norway 143
Northwest Africa 131
Numen 346

Obania 330
Ofnet 106, 107, 108
Sacrifice 288, 310, 489, 491 ff., 495 ff., 519, 520
Sacrificial animal 309
Orang 94
Oranien 104
Orientalide 125, 129, 130, 131, 143, 172, 176, 185
Ornament 362, 366
ornamental decoration 361
Ornamentation 359
orthogenetic evolution 98
East Africa 75
East Baltic race 142
Easter Island 134, 211, 213, 214
Austria 143
Eastern European race 129
Eastern Spanish group 367 ff.
Oceania 204 ff., 205, 206, 207

Paleanthropi 78 ff., 98
Paleomongoloids 151, 159 ff.
Paleanegrids 170, 183, 187
Paleolithic 61, 356
Paleopsychology 235
Palestine 80
Pampids 196, 200
Papua-Melanesians 206, 215
Papuasids 163, 209
Papuan languages 207
Paranthropus 95, 96
Patagonians 200, 206, 210
Bow and Arrow 303, 327, 435, 436, 437, 513
Equids 47
Plant-Based Diet 420
Plant Gathering 419
Plant Breeders 388–390
Plant-Based Diet 512
Plant Life 522
Phenotype 111

Philippines 165
Phylogeny 47
Piltdown 82, 83, 84
Pithecanthropus 16, 63–95, 154
Pithecoid 56
Planid 194, 199
Sculpture 363
Pleistocene 58, 60, 61, 63, 64
Plesianthropus 93, 96
polychrome images 365
Polynesia 132 ff., 211, 212, 213
Polynesia 204
Polynesians 133, 134, 209, 213, 214, 215
Pongidae 35 ff., 54, 55, 91, 93
Pongoids 97, 98
Population 111, 112, 117
Prehistoric Archaeology 233, 235
Prehistoric Cultural Units 243
Prehistoric Cultures 380 ff., 390
Prehistoric Ethnology 235
Pre-Mousterian 272
Primary Culture 388 ff.
Primates 22, 49 ff., 53, 54, 55
primal sacrifice 288, 456, 491 ff.
primitive art 351
designations based on priority 223 ff.
private property 515
production cultures 521 ff.
stage of production 388 ff., 389
Progressivism 13
Promiscuity 376
Proto-Australide 207
Pueblo-Andide 196
Pygmies 106, 168, 170, 186, 210, 443
Pygmide 152, 167, 174
Pygmoide 209

Sources of Prehistory 235, 236
Source Analysis 231, 237, 238
Quinzano 87

Race 111–115
History of Races 235
Racial Map 141
Racial Types 137, 149, 169, 193, 195

Racism 117
Regional type 112
Relief 361, 362
Relief sculpture 358
Religion 307 ff., 309, 455 ff., 468 ff.
Rhodesian man 79
Riss Ice Age 60, 61, 276
Incised Drawings 362, 363, 364
Native Americans 199
Romania 144
Torso Length 36
Russia 145, 156
Saccopastore 81
Sahara 177 ff.
Scythians 126
Gathering Economy 284, 298 f., 416 ff., 512
Samoyeds 157
Sangiran (Java) 74
Sapiens group 63, 81–91, 99
Sapiens type 62, 79
Sardinia 144
Sarmatians 126
Mammals, distribution 60
Skulls 40, 45, 90, 91, 139
Skull width 91
Giving 460
Chimpanzee 94, 96
Sled 339
Ornaments 306 ff., 360, 513 513
Snowshoes 507
Corded Ware culture 127
Grace period 417
Creative power 482
Creation festivals 499
Belief in creation 483
Creation and evolution 16
Scotland 322
Indian script 213
Illiterate peoples 379 ff.
Shoulder-axe culture 161
Black People 117
Switzerland 143
Lake Fishing 329, 330
The Soul of Peoples 384 ff.
Selish Indians 464 ff., 465
Sedentary Life 220, 512
Siam 158
Siberians 128, 143, 151
Siberia 509
Settlements 331 ff.
Settlement Patterns 512
Sinanthropus 67, 68, 154
Sinids 147, 150, 151, 155, 157, 158, 160, 161
Customs 455 ff.
Morality 455 ff.
Scandinavia 323
Scythians 126
Slavs 129
Solutrean 100, 102
Solutreans 292, 361, 362
Sonorids 196, 200
sociobiological differentiation 220
Social Forms 516
Spain 144
Concept of Species 51, 52
Language 31, 42, 285 ff., 439 ff., 441, 442
Languages of the Americas 190
History of Language 235
State 410 ff.
State of Primitive Culture 401 ff.
Progenitor Couple 484
Progenitor 392
Class-Based Social Structure 521
Steinheim an der Murr 79
Stone Tools 61, 71, 266 ff., 289 ff., 320 ff.
Middle Stone Age 318 ff.
Status of Prehistory 233
Steppe Hunter Culture 505 ff.
Mortality 221, 222
Sterkfontein 92
Forehead 91
Tusks 48
Shorelines 276 ff., 277
Stratigraphy 250, 273 ff.
Sequence of stages 48
Subarctic 194
Sudan 180, 181, 182, 183
Sudanid 171, 180, 181, 182
Southern humanity 117, 152, 163 ff., 206 ff.
Southern Slavs 144
Expiatory Sacrifice 494, 495 ff.
Swanscombe 84, 85
Swartkran 92, 95
Syria 130
System of Primates 54
Scientism 25
Talgai 207, 208
Tamils 164
Dance 519
Tardenoisian 121, 343
Tasmanian 209
Tasmania 205
Tasmanians 198, 206, 208, 215
Taungs 98
Tauride 123
Tayacian 271
Technology 333 ff.
tectonic forces 115
Tertiary humans 262 ff.
Terraces 275 ff.
Territory 405
Téviec 106, 107
Animal images 349
Animal figures 358
Animal breeders 390
Tocharians 126
Tone languages 452
Pottery 337
Totem 389
Totemism 390, 517
Traditional Costume 369
Transformism 22
Transvaal 92
Trinil 64
Tschampa 161
Tschedei 145
Tuareg 131, 179, 180, 181
Tungids 143, 147, 150, 154, 156, 157, 162
Turan 156
Mix of Types 112
Types of Systematic Groups 50
Ukraine 145
Openness to the Environment 33
Pristineness 458
Illegitimate Children 458
Hungary 145
Universal History 234
Lower Jaw 76
Prehistory 229 ff.
Prehistory (Beginning) 230
Primitive Communism 376
Primitive Culture 375 ff., 387 ff., 390 ff., 502
Causal Analysis 252
Problem of Origins 21 ff.
Variety 111, 112, 113, 115, 117, 118, 141
Venus figurines 357, 358
Behavioural research 32
Transportation 338 ff., 514
Means of transportation 427 ff., 431
Lending 460
Contract 312
Contract theory 413
Representatives of evil 472
Ornaments 340
Livestock breeding 389, 522
Square-axe culture 161
Vitalism 29
Bird feather 30

Ethnology 379
Ethnic Group 112
Folklore 235
Full-body sculpture 358
Volume of cranial height 66

Weapons 266 ff., 267, 289 ff., 434, 460, 513
Wall paintings 364, 365
Migration patterns 279 ff., 289 ff.
Migration of cultural elements elements 248
Wall paintings 356
Water 422
Weddide 132, 133, 146, 153, 160, 161, 164, 165, 210
Paths to Europe 118
White people 117
Tools 266 ff., 289 ff., 357, 432 ff., 460, 513
Significance of the characteristics 52
Vikings 128
Hunting and gathering 416, 503
Wilton-Smithfield culture 506, 507
Windbreak hut 430
Wintu Indians 444 ff.
Economy 280 ff., 298 ff., 327 ff., 414 ff., 511 ff.
Bison 363
Wogulen 220
Housing 282, 283, 311 ff., 331 ff., 427 ff., 428, 429, 460, 512
Würm Glacial Period 60, 61, 276
Root, common 98
Yakuts 157
Yamana Firelands 463 ff.
Yao 159, 160
Yualeai Australians 446 ff.
Yuki 467

Wizards 350, 517, 520
Ages of the Earth 59
Phases of Culture 381, 382 ff.
Tent 313, 314, 333, 512, 513
Central Authority 515
Central Mongoloid 143
Ceremonies 497 ff.
Gypsies 146
Interglacial periods 60
Cycle Theory 12

FOREWORD. By FRITZ VALJAVEC, University Professor, Munich 9
THE TEACHINGS OF CULTURAL HISTORY ON HUMAN NATURE
By FRITZ KERN †, University Professor, Bonn 11
MAN
THE BECOMING OF MAN AND ANCIENT HUMANITY
THE EMERGING HUMANITY · THE PROBLEM OF HUMAN ORIGINS
By ADOLF PORTMANN, University Professor, Basel 21
THE OLDEST HUMAN REMAINS AND THEIR GENEALOGICAL INTERPRETATION
By JOSEPH KÄLIN, University Professor, Fribourg 33
I. Introduction 33
II. The Distinctive Characteristics of the Modern Human Type (Homo sapiens type) in
Comparison to the Type of “Anthropoid” Apes (Pongidae type) 35
III. Concepts, Scope, and Limits of Phylogenetic Research 46
IV. The Systematic Relationships Among Primate Groups and Their Significance
for the Problem of Human Evolution 49
V. The Temporal Framework of Human Evolution 58
VI. The Paleontological Evidence of Human History 63
1. The Archaeanthropi (Pithecanthropus Group) 64
2. The Palaeanthropi (Neanderthal Group) 78
3. The Early Forms of the Neanthropi (“Sapiens” Group) 82
HUMANS IN THE EARLY PALEOLITHIC AND MESOLITHIC PERIODS. By HENRI
V. VALLOIS, Director of the Musée de l’homme, Paris 99
I. The Upper Paleolithic 99
1. Western and Central Europe 99
2. Outside Europe 104
II. The People of the Mesolithic 105
1. Western Europe 105
2. Outside Europe 109
BIODYNAMICS OF THE CONTINENTS
PRELIMINARY REMARKS 111
THE BIODYNAMICS OF THE EUROPIDS. By EGON FREIHERR VON EICKSTEDT,
University Professor, Mainz 115

1. Die europide Urzeit und das Einströmen der Neuformen 118
2. Der Aufbruch der Mediterraniden 120
3. Berggürtel und Kurzkopfrassen 122
4. Der blonde Norden 125
5. Vergessener Osten 128
6. Der orientalo-berberide Druckgürtel 129
7. Indo-weddides Gegenspiel und Polyneside 132
8. Die Eroberung der Südsee 133

Die heutigen Menschen Europas. Von Bertil Lundman, Univ.-Dozent, Uppsala 135

Rassentypen und Typendynamik von Asien. Von Egon Freiherr von Eickstedt, Univ.-Prof., Mainz 147
I. Die Varietäten 147
1. Typus und Raum 147
2. Der tungide Kern 150
3. Die drei siniden Stufen 150
4. Die palämongolide Tropenform 151
5. Sibiride Trümmer 151
6. Die südasiatischen Zwergsplittergruppen 152
7. Der melanide Rassentypus 152
II. Die Typendynamik 152
1. Die Voraussetzungen 152
2. Asiatische Urzeit 154
3. Das tungide Bewegungszentrum 154
4. Das Ausschwärmen der Bedrängten 155
5. Der sinide Block 157
6. Palämongolide Weltexpansion 159
7. Der indo-melanide Stau 162
8. Die negritischen Splitter 165

Die Rassen Afrikas. Von Hermann Baumann, Univ.-Prof., Frankfurt a. M. 167

Die Biodynamik des afrikanischen Kontinents. Von Santiago Alcobé y Noguer, Univ.-Prof., Barcelona 175
1. Einleitung 175
2. Die europiformen Komponenten Nordafrikas 175
3. Die Äthiopiden und die Sahara 177
4. Kontakt und Resistenz in der sudanesischen Zone 180
5. Die khoisanide Flucht und die Besitznahme des Urwalds 183

RACIAL TYPES AND BIODYNAMICS OF AMERICA. By JOSÉ IMBELLONI, University Professor, Buenos Aires 188
1. The Linguistic Criterion 190
2. The Ethnological Classification 190
3. The Morphological and Genealogical Classification 192
4. Settlement, Migrations, and Cultural Heritage 196
RACIAL STUDIES AND RACIAL HISTORY OF OCEANIA. By RENATO BIASUTTI, University Professor, Florence 204
1. Races and Languages, the Indigenous Population 205
2. The Racial Classification of the Polynesians 210
3. Easter Island and Its Pictographic Scripts 213
4. The Current Situation 214
POPULATION BIOLOGY OF PREHISTORIC TIMES. By ILSE SCHWIDETZKY, Professor, Mainz 217
The Priority-Based Designations of Human Varieties (Races) in Binary and Trivial Nomenclature 223
EARLY HISTORY
FUNDAMENTAL QUESTIONS OF PREHISTORY. By OSWALD MENGHIN, University Professor, Buenos Aires 229
THE EARLY AND MIDDLE PALEOLITHIC, OLD AND MIDDLE PALEOLITHIC. By HENRI BREUIL, Abbé, Professor at the Institut de France, Paris 259
I. The Age of Humanity 259
1. The Discovery of Ice Age Humans 260
2. The Question of Tertiary Humans 262
3. The Environment of Ice Age Humans 263
4. The Absolute Age of the Ice Ages and of Humans 265
II. Weapons, Tools, and Stone Tool Industries 266
1. Artifact Forms and Types 267
2. The Question of Pre-Lithic or Alithic Stone Tool Industries 269
3. Early and Middle Paleolithic Stone Tool Industries 270
III. Chronological and Historical Context of the Stone Tool Industries 273
1. Stratigraphy of Caves and Rock Shelters 273
2. Glacial Levels and Stone Tool Industries 274
3. Terraces and Stone Tool Industries 275
4. Beachlines and Stone Tool Industries 276
5. Pluvial Deposits and Stone Tool Industries 277
6. Summary: Cultural Periods and Cultural Provinces 278

IV. Overview of the Culture of the Upper and Middle Paleolithic 280
1. Material Culture and Economy 280
2. Society, Language, and Intellectual Life 285

THE LATE PALEOLITHIC · EARLY MESOLITHIC. By ALFRED RUST, Museum Assistant, Ahrensburg 289
1. Tools, Weapons, and Migration Patterns 289
2. Diet and Hunting in the Upper Paleolithic 298
3. Clothing and Jewelry in the Upper Paleolithic 306
4. Art, Religion, and Burial Practices in the Upper Paleolithic 307
5. Lifestyle and Dwellings in the Upper Paleolithic 311
6. The Reclamation of the Northern Territories in the Upper Paleolithic 315

THE MIDDLE STONE AGE. By J. G. D. CLARK, Professor, Cambridge 318
1. General Characteristics 318
2. Food Economy 327
3. Settlements 331
4. Technology 333
5. Trade 337
6. Transportation 338
7. Art 339
8. Funerals 342

THE ORIGINS AND BEGINNINGS OF ART. By HANS SEDLMAYR, University Professor, Munich 346

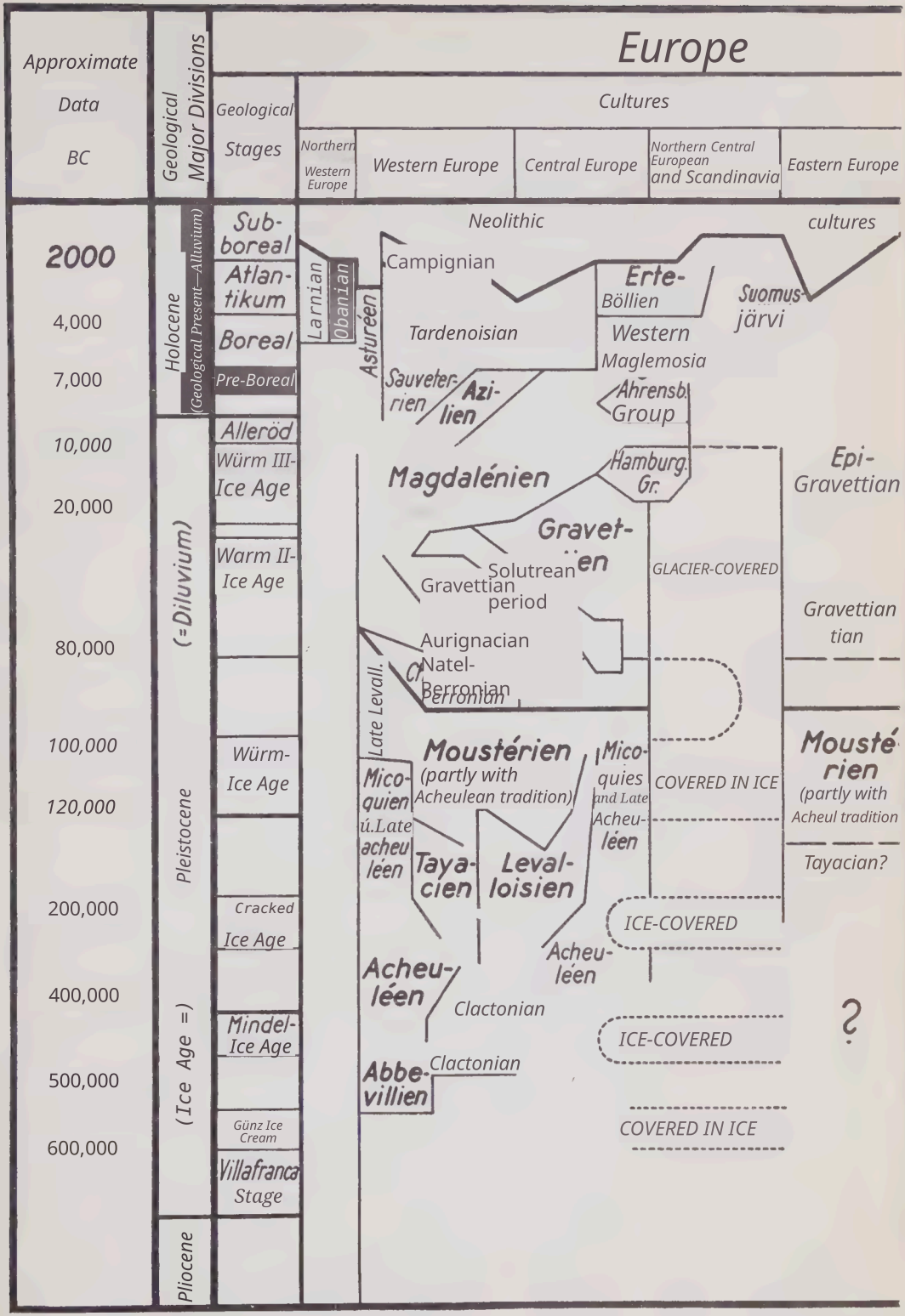
THE ART OF THE EARLY AND MIDDLE STONE AGES. By FRANZ EPPEL, Dr. phil., Vienna 356
I. The Franco-Cantabrian Group 357
II. The Eastern Spanish Group 367

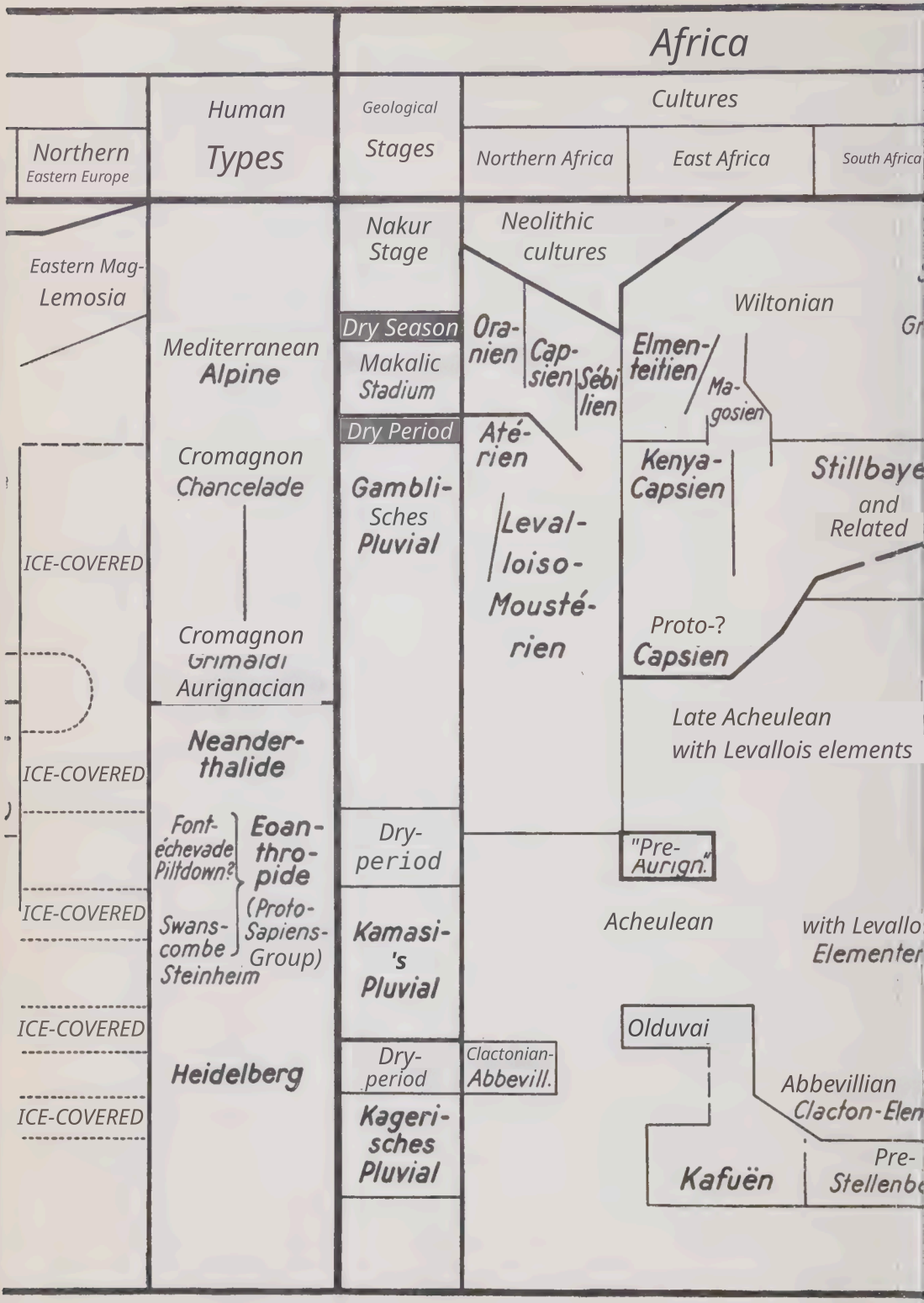
LIVING PEOPLES AS REMNANTS OF THE MOST ANCIENT PEOPLES AND CULTURES

THE PRIMITIVE CULTURES: EARLY HUNTING AND GATHERING STAGES. By P. WILHELM SCHMIDT, SVD, University Professor, Posieux-Fribourg 375
I. Introduction to the Task and Method. Overview 375
1. Ethnology in Shedding Light on the Earliest History of Humanity 375
a) Cultural-historical ethnology (375). – b) Other historically oriented movements in ethnology (377).

2. The Cultural-Historical Method in the Study of the Earliest Cultures 379
a) The Possibility of Historical Research Among Non-Literate Peoples (379). – b) Successive Cultural Layers in Ethnology as Historical Phases (380). – c) Historical Phases of Culture in the Americas and Australia (381). – d) Chronological phases of culture in North America (382). – e) Determining the chronological sequence in mixed cultures (382). – f) Ensuring historical causal research (383). – g) Evolution and evolutionism. Internal cultural development (384). – h) Empathizing with the soul of peoples and their cultures (384).
3. Overview of the oldest cultures. The cultural spheres 385
a) Concept and function of the cultural sphere (385). – b) The cultural spheres of the earlier hunting-and-gathering stage: The primordial cultures [= F. Kern's "basic cultures"] (387). – c) The cultural spheres of the [accumulation and] production stage: The primary cultures (388). – d) Retrospective and summary (390).
I. The Primordial Cultures 390
1. The Social Order of Primitive Culture 392
a) Marriage in Primitive Cultures (393). – b) The Family in Primitive Cultures (396). – c) The Child in Primitive Cultures (397). – d) Paths to the State of Primitive Culture. Its Organization (401). – e) The Governance of the Primitive State (403). – f) The Territory of the Primitive State (405) – g) War and Peace in the Primitive States (406). – h) The Family's Autonomy within the State (409). – i) The Primitive State as the Beginning of All State Development (410).
2. The Economic Management of Primitive Culture 414
a) The Family as the Foundation of the Economy (414). – b) The Gathering Economy of Primitive Culture (416). – c) The Natural Division of Labor Between Men and Women (418). – d) Animal and Plant-Based Foods (420). – e) Food Preparation (423). – f) Fire, its origin, and its production (424). – g) Clothing and housing. Means of transportation (427). – h) Tools of Primitive Culture (432). – i) Weapons of Primitive Culture (434). – k) Utensils and vessels. The art of basketry (437).
3. The Life of the Soul in Language and Art 439
a) The Nature of the Languages of Primitive Culture (439). – b) Literary Creations of Primitive Times (443). – c) Visual and Musical Arts in Primitive Culture (449).
4. Customs and Morality in Primitive Culture 455
a) The Correct Starting Point (455). – b) The Morality of Religion (455). c) Family Morality (457). – d) Sexual Morality (458). – e) The Morality of Property (459). – f) An Overview of Morality Among the Most Ancient Peoples (462). – g) Moral Instruction in the Coming-of-Age Ceremony of the Yamana of Tierra del Fuego (463). – h) Morality and Moral Rules Among the Selish Indians (464). – i) Summary (466).
5. The Religion of Primitive Culture 468
a) Foundations of the Religion of Primitive Culture (468). – b) Name, Abode, and Form of the Supreme Being of Primitive Culture (471). – c) Attributes and Functions of the Supreme Being of Primitive Culture (475). – d) Wholeness of the

Supreme Being of Primitive Culture (484). – e) Worship of the Supreme Being in Primitive Culture (487). – f) Worship as the Cornerstone of Religion and of the Entire Individual and Collective Life of Primitive Culture (500).
HIGHER HUNTING: LATER STAGE OF HUNTING AND GATHERING. By KARL J. NARR, Dr. phil., Bad Honnef 502
I. Delimitation and Overview 502
II. The Prehistoric Roots of the Euro-African Steppe Hunter Culture 505
III. Origin, Development, and Spread of Higher Hunting 507
IV. Outline of the Higher Hunter Culture 511
1. Ergology and Economy 511
2. Society 514
3. Intellectual Life 516
V. Advanced Hunting Culture and Agricultural Cultures 521
APPENDIX
BIBLIOGRAPHY 525
INDEX 549


Europe
Approximate Data BC
Geological Major Divisions
Geological Stages
Cultures
Northern Western Europe
Western Europe
Central Europe
Northern Central European and Scandinavia
Eastern Europe
2000
4,000
7,000
10,000
20,000
80,000
100,000
120,000
200,000
400,000
500,000
600,000
Holocene (Geological Present—Alluvium)
Pleistocene (=Diluvium)
(Ice Age =)
Pliocene
Sub-boreal
Atlan-tikum
Boreal
Pre-Boreal
Alleröd
Würm III-Ice Age
Warm II-Ice Age
Würm-Ice Age
Cracked Ice Age
Mindel-Ice Age
Günz Ice Cream
Villafranca Stage
Neolithic cultures
Larnian
Obanian
Asturéen
Campignian
Tardenoisian
Sauveterrien
Azilien
Erte-Böllien
Suomusjärvi
Western Maglemosia
Ahrensb. Group
Magdalénien
Hamburg. Gr.
Epi-Gravettian
Gravet-ien
Solutrean
Gravettian period
GLACIER-COVERED
Gravettian tian
Aurignacian
Natel-Perronian
Late Levall.
Moustérien (partly with Acheulean tradition)
Micoquien
ú.Late acheuléen
Micoquies and Late Acheuléen
COVERED IN ICE
Mousté-rien (partly with Acheul tradition)
Tayacian?
Taya-cien
Leval-loisien
ICE-COVERED
Acheu-léen
Clactonian
Abbe-villien
?
COVERED IN ICE


Africa
Northern
Eastern Europe
Human
Types
Geological
Stages
Cultures
Northern Africa
East Africa
South Africa
Nakur
Stage
Neolithic
cultures
Eastern Mag-
Lemosia
Dry Season
Makalic
Stadium
Mediterranean
Alpine
Ora-
nien
Cap-
sien
Sébi
lien
Elmen-
teitien
Ma-
gosien
Wiltonian
Dry Period
Até-
rien
Cromagnon
Chancelade
Gambli-
Sches
Pluvial
Kenya-
Capsien
Stillbaye
and
Related
ICE-COVERED
Leval-
loiso-
Mousté-
rien
Cromagnon
Grimaldi
Aurignacian
Proto-?
Capsien
Late Acheulean
with Levallois elements
Neander-
thalide
ICE-COVERED
Font-
échevade
Piltdown?
Eoan-
thro-
pide
(Proto-
Sapiens-
Group)
Dry-
period
"Pre-
Aurign."
ICE-COVERED
Swans-
combe
Steinheim
Kamasi-
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Pluvial
Acheulean
with Levallo
Elementer
Olduvai
ICE-COVERED
Dry-
period
Clactonian-
Abbevill.
Heidelberg
Abbevillian
Clacton-Elen
ICE-COVERED
Kageri-
sches
Pluvial
Kafuën
Pre-
Stellenbe

East and South Asia

People-Types	Geological Stages	Cultures: India	Burma	China	Java	People-Types
Khoisan **Cromagnide** Proto-Ethiopids	Panchiao	**Neol.** Microlithic. Industries?		**Neol.**		
Boskopids Fish-Hoek **Australi-form**	Malan	Developed **Soan**	Late-**Anya-thien**	Ssjara Ossogol and **Ordos** Culture	Ngang-dong-Kul-tur?	Wadjak? Choukoutien (Upper Cave)
Rhodesia-People? (Broken Hill)	Notopoero					
Pithecan-?thropus ,,...upus njarasensis (=Africanthr.)	Potwar / Chingshui / Ngangdong	**Acheu-léen** / Late-**Soan** / Early-**Soan**	Early-**Anya-thien**	**Chou-kou-**Tenian	**Pat-jita-nien?**	**Ngangdong** P. Soloensis
	Boulder-Cong. / Trinil	Punjab-Industry		Pre-Chou Kouténian		Pithecanthropines: P. erectus (=Sinanthropus) P. pekinensis; P. robustus Modjokorto
	Sanmenian / Poetjiang					
Australo-Pithecines	Tatrot-Pinjor / Nihowan / **Djetis** / Yüshe / Kaliberg					
	Dhok-Palan					

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